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Social and physical ecologies for child resilience: Wisdom from Asia and Africa

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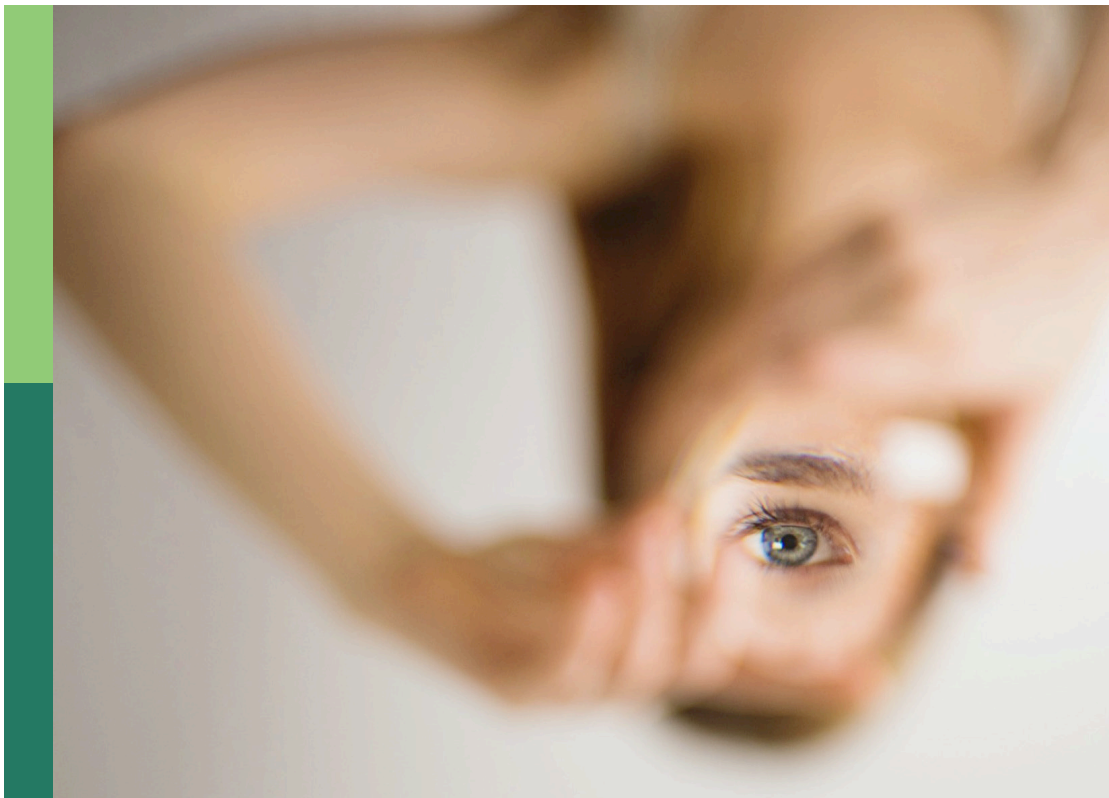

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Social and physical ecologies for child resilience: Wisdom from Asia and Africa

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Editorial: Social and physical ecologies for child resilience: wisdom from Asia and Africa

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child and youth resilience, multisystemic resilience, physical ecologies, social ecologies, Asia, Africa

Editorial on the Research Topic
Social and physical ecologies for child resilience: wisdom from Asia and Africa

1. Introduction

The past five decades have seen significant advancements in child and youth resilience research. However, there can be no room for complacency as the wellbeing of the next generation is continuously thwarted by "large-scale volatilities", including global economic shocks, geopolitical tensions, the climate emergency, and persistent social inequalities. Hence, we urgently need a proactive approach to build resilience in future generations. It is this urgency that prompted this Research Topic, which explores the "ecologies" that nurture child and youth resilience in Africa and Asia. While Africa and Asia constitute the bulk of human society and are particularly vulnerable to volatilities, they are under-represented in the resilience literature (Theron and van Breda, 2021). This Research Topic is, therefore, crucial to redress the problem of a "marginalized majority" in the production of knowledge about child and youth resilience. In this Research Topic, the term "child and youth" is used to denote the age group of 3–26. It is by no means our intention to lump together young people as a monolithic whole. The use of "child and youth" here cannot be treated as a homogenizing concept but as a pragmatic terminology to cover the age range of the research samples of the different studies included in this Research Topic.

Resilience among young people is a contentious construct, defended and debated through psychological, anthropological, (epi)genetic, and sociological lenses (see review in Mu, 2022). Even so, there is a common understanding that young people's capacity to respond adaptively to significant stress is *co-informed* by their social ecologies, including families, schools, communities, and governments (Mu, 2018), and their built and natural environments (Ungar and Theron, 2020). In other words, systems work most effectively through a multi-systemic, coordinated approach (Ungar and Theron, 2020; Masten et al., 2021). In line with these understandings, the nine articles that constitute this Research Topic take a social-ecological approach to child and youth resilience.

2. Overview of the Research Topic

The first two articles position the global COVID-19 pandemic as a critical learning moment for building child resilience in China (Dou et al.) and Singapore (Chen and Yeung). Although the two studies concerned different age groups of children (grades 4–7 schoolers in China and young children aged 3–6 in Singapore) and considered resilience through different sets of variables, they both provided longitudinal, large-scale evidence that highlights the significant role of family functioning/familiar resources in shaping children's resilience in Asian contexts.

The remaining seven articles zoom in on diverse African contexts, providing insights into the importance of multiple, contextually responsive, ecological resources in fostering resilience to diverse stress exposures (e.g., streetism, HIV-related adversities, divorced families, and structural disadvantage). Pillay's review suggests the value of psychological, social, and physical ecologies on child resilience globally, while resilience building at the individual, relationship, community, and societal levels benefited children in South Africa. Similarly, Malindi and Hay affirmed personal strengths and socioecological resources as a booster of resilience for their sampled participants (aged 12–19) brought up in out-of-home care institutions during COVID-challenged times in South Africa. In contrast, Somefun et al. investigated how well benevolent childhood experiences (BCEs) associated with family, school, and community ecologies facilitated resilience to depressive symptoms among young South Africans (aged 18–26) and found no significant association between BCEs and depressive symptoms of the young adult participants. The authors theorized that the measurement of more culturally sensitive BCEs might have produced different results.

Articles in other African contexts indicate protective individual and ecological effects on child and youth resilience. The cross-national study of participants aged between 12 and 20 years in nine sub-Saharan countries (Bandeira et al.) revealed that feeling safe (at home, in the community, and/or at school) was a common enabler of resilience. Goodman et al.'s intervention study on Kenyan children (average age 13) living in street situations found that reintegrating these children into the broader community had greater success when families and communities were supported to provide better care for the children. Similarly, ecological support from the extended family members, peer groups, schools, and the wider communities co-nurtured resilience in children (aged 9–12) exposed to parental divorce in Namibia (Van Schalkwyk and Gentz). Likewise, in the photovoice study reported by Vindevogel and Kimera, the wellbeing of Ugandan young people (aged 14–21) living with HIV was rooted in multisystemic resilience resources in their social and physical ecologies.

3. Conclusions

This Research Topic has advanced insights into the multiple ecologies informing child and youth resilience in Asian and African countries. It highlighted the importance of policymakers and practitioners taking a culturally responsive, ecological approach to building and sustaining child and youth resilience (Ungar and Theron, 2020). While efforts to promote child and youth resilience should be tailored to the unique context/s of sub-populations of young people, we anticipate that this Research Topic can have implications beyond the Asian and African settings. However, across the nine articles, very little attention was paid to physical ecologies. Going forward, and as presaged by Ungar and Theron (2020) and Masten et al. (2021), we need research in Africa and Asia that investigates the social and physical ecologies that matter for the resilience of African and Asian young people and the ways in which these ecologies co-facilitate positive outcomes.

Author contributions

HL: Writing—original draft, Writing—review & editing. GM: Conceptualization, Writing—review & editing. LT: Conceptualization, Writing—review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Family functioning and resilience in children in mainland China: life satisfaction as a mediator

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Introduction: Grounded in the perspective of "Positive Youth Development" (PYD), resilience is an important developmental asset shaping human development. Although many studies have examined the impact of resilience on child developmental outcomes, relatively few studies have focused on the predictors of resilience, in particular familial antecedents of resilience in Chinese children and adolescents. In addition, the degree to which life satisfaction contributes to the mechanism by which family functioning impacts the development of children's resilience over time needs to be clarified. Besides, there is a scarcity of studies that incorporate family functioning, resilience as well as life satisfaction in a single comprehensive investigation to analyze the mediating impact of life satisfaction on the linkage between family functioning and resilience under COVID-19.

Methods: The study investigated the predictive role of family functioning on resilience as well as the mediating effect of life satisfaction within the context of COVID-19, using data gathered in two waves before the onset of the pandemic and after the resumption of school during the pandemic, with 6months apart. We employed the 33-item "Chinese Family Assessment Instrument" to evaluate family functioning, the 7-item "Chinese Resilience Scale" to assess resilience, and the "Satisfaction with Life Scale" with 5 items to measure life satisfaction.

Results: As per the responses of 4,783 students in Grades 4 through 7 recruited in Sichuan, China, family functioning significantly predicted resilience concurrently and longitudinally. After controlling for resilience scores in Wave 1, results demonstrated that family functioning examined in Wave 1 predicted an increase in resilience reported in Wave 2. In addition, family functioning significantly predicted life satisfaction, which also significantly predicted resilience. Multiple regression using PROCESS analyses indicated that life satisfaction mediated the predictive relationship between family functioning and child resilience.

Discussion: The findings spotlight the significant involvement of family functioning as well as life satisfaction in shaping children's resilience in the Chinese context. The study also supports the hypothesis that perceived satisfaction with life serves as a mediator between family functioning and child resilience, suggesting interventions and support should concentrate on the family level for enhancing resilience in children.

KEYWORDS

family functioning, resilience, life satisfaction, Chinese children, positive youth development, mediator

1. Introduction

Walsh (2002) defined resilience as "the ability to withstand and rebound from adversity" (p. 130). According to Shek et al. (2017), resilience is the ability to positively adjust to stressful life events and maintain healthy reactions in stressful contexts. It is a multi-dimensional concept including three fundamental elements: exposure to stressful events, positive adjustment to adversity, and sustainability. Resilience is an important internal developmental asset that helps adolescents face various developmental challenges, such as identity formation, stress management, and relationship formation. Strong resilience in children and adolescents is associated with better self-autonomy, critical thinking skills, social competence, a sense of purpose, and problem-solving abilities (Zolkoski and Bullock, 2012) as well as better development in various life domains (Wu et al., 2017). Under COVID-19, resilience can help children and adolescents overcome various adaptation issues, such as anxiety, social isolation, economic stress, and uncertainty. Rania et al. (2022a) argued that individual empowerment, which involves building individual resilience, contributes to group resilience in response to the collective trauma resulting from the pandemic. Therefore, cultivating resilience is a promising strategy for helping children and adolescents adapt positively to internal and external changes and challenges.

According to the Developmental Systems Theory (DST) that advocates the influence of different systems on developmental outcomes (Ford and Lerner, 1992), cultivating resilience involves three main factors, including personality traits, family system characteristics, and the broader social context such as schools and communities (Zolkoski and Bullock, 2012). Given the collectivistic nature of Chinese culture (Wu and Tseng, 1985; Wu et al., 2017), family system characteristics appear to play a more prominent role (Wu et al., 2017), as highlighted by "the persistence of a closely knit family as the center of Chinese culture" (Wu and Tseng, 1985, p. 8). Furthermore, as "resilience is not a simple linear causal process in which limited to the strength that leads directly to a good developmental outcome" (Akbar et al., 2014, p. 517), there is a need to explore the interactions between the diverse protective factors and multiple processes involved in resilience. In this study, we examined the predictive effect of family functioning on children's resilience under the context of COVID-19, with life satisfaction proposed as a mediating factor.

1.1. Family functioning and resilience

Scholars have conceptualized different dimensions of family functioning. Patterson (2002) proposed that family functioning includes economic support, family formation, socialization, and protection of vulnerable members. Epstein et al. (2003) identified six dimensions of family functioning: communication, problem-solving, role functioning, affective responsiveness and involvement, and behavior control. Olson (2011) discussed both the positive aspects, such as cohesion and flexibility, and negative aspects, such as disengagement, enmeshment, rigidity, and chaos, of family functioning. Shek (2002a) developed the "Chinese Family Assessment Instrument" (C-FAI) to assess both systemic attributes, such as harmony, mutuality, and absence of conflict, and dyadic attributes of parent–child relations, including parental concern and parental control, as indicators of family functioning.

The connection between family functioning and personal resilience has theoretical support. According to the perspective of "Positive Youth Development" (PYD) (Shek et al., 2017), family functioning is an environmental asset for child and youth development. Family functioning processes delineated in the Circumplex model are considered to "underpin resilient outcomes among family members" (Oshri et al., 2015, p. 46). In addition, building family resilience, as advocated by the "Family Resilience Theoretical Framework," seeks to strengthen the family as a dynamic organism capable of fostering individual resilience of all its members (Walsh, 1996), demonstrating the protective impact of family function on individual resilience.

Empirical evidence also supports the association between healthy family functioning and the resilience of children and adolescents. According to a study conducted by Wyman et al. (1992) on 2,069 primary school students, resilient students reported a more stable home environment, more positive relationships with caregivers, and greater consistency in family discipline. Using interview data collected from 77 U.S. adolescents whose parents were HIV-infected, Rosenblum et al. (2005) demonstrated that positive family functioning was positively associated with resilience and negatively associated with substance abuse and peer deviance. Similarly, Sahanowas and Halder (2019) revealed family problem-solving and roles predicted resilience among Indian undergraduate students ($N = 490$).

1.2. Family functioning and life satisfaction

As a cognitive constituent of subjective well-being (Andrews and Withey, 1976), life satisfaction is conceptualized as a "conscious cognitive judgment of one's life in which the criteria for judgment are up to the person" (Pavot and Diener, 1993, p. 164). Generally speaking, the level of a person's life satisfaction is determined by the degree to which the perceived quality of life meets self-defined criteria.

Existing literature has demonstrated that family factors, such as parental control, family communication, family migration, cohesion, and adaptability, are crucial for adolescents to achieve and enhance life satisfaction. Based on 255 Italian adolescents aged 15–17 years, Cacioppo et al. (2013) found a positive association between family functioning and overall life satisfaction among adolescents. Using a sample of 703 Chinese students who had experienced family immigration from rural to urban areas, Yuan et al. (2019) found that family communication, cohesion, and adaptability were positively related to students' life satisfaction. Researchers also found that negative aspects of family functioning have destructive effects on adolescent life satisfaction. For example, Cacioppo et al. (2013) reported that teenagers' overall life satisfaction was negatively correlated with perceived parental psychological control. Rania et al. (2022b) conducted a survey with 560 Italian parents and reported that increased family conflict could significantly undermine family well-being, especially when the fragility of families has been exposed by the COVID-19 pandemic that acts like a "magnifying glass." In the Chinese context, Shek (2002b, 2005), and Shek and Liu (2014) have conducted a series of investigations and found a positive association between family functioning and adolescent development and well-being. For example, using the "Chinese Family Assessment Instrument," Shek (2002b) examined juvenile

adaptation in 1,519 Hong Kong teenagers and revealed that family functioning was significantly related to adolescent life satisfaction.

1.3. Life satisfaction and resilience

Research on resilience has gained prominence in the field of positive psychology in the last decade (Shek et al., 2017). The positive psychology paradigm criticizes that "psychological practice focuses almost exclusively on pathology" (Faller, 2001, p. 7), and emphasizes promoting life satisfaction through building strengths such as resilience and self-efficacy (Gilman and Huebner, 2003). Guided by positive psychology, researchers have examined the relationship between resilience and psychological well-being and found that resilient individuals tended to report higher life satisfaction and lower levels of ill-being, such as psychological anxiety. For instance, a study conducted by Beutel et al. (2010) with 2,144 Germans revealed that resilience was positively correlated with general life satisfaction and self-esteem, and negatively correlated with depression and anxiety. Similarly, Akbar et al. (2014) surveyed 100 Nomads and found a significant positive correlation between life satisfaction and resilience.

Despite numerous studies focusing on the positive effect of resilience on psychological well-being, life satisfaction may also influence resilience. As argued by Proctor et al. (2009), "life satisfaction is more than just an outcome of various psychological states, it is also an influential predictor of psychosocial systems" (p. 604). Based on a sample of 929 adults in Turkey during the COVID-19 pandemic, Karataş and Tagay (2021) found that life satisfaction, meaning in life, and the absence of traumatic experiences positively predicted resilience. Similar findings were reported in adolescent samples. Sahin Baltaci and Karataş (2015) reported that life satisfaction and perceived social backing were significant predictors of resilience among 386 Turkish secondary school students. In addition, Yakici and Zeliha (2018) found that life satisfaction had a positive predictive effect on resilience among 659 Turkish university students.

1.4. Family functioning, life satisfaction, and resilience

A few studies have examined the relationships between family functioning, life satisfaction, and resilience in a single study. This issue is important because studies reveal close relationships between these constructs, such as the mediating effect of resilience in linking family functioning and life satisfaction. For example, Azpiazu Izaguirre et al. (2021) surveyed 1,188 middle school students in Spain and found that resilience partially mediated the relationship between family support and satisfaction with life. Similarly, Zarei and Fooladvand (2022) found that family functioning positively affected life satisfaction *via* the mediation of students' resilience among 480 Iranian female college students under COVID-19.

While research findings highlight the close relationships between family functioning, resilience, and life satisfaction, as well as the mediating effect of resilience and its subsequent developmental outcomes, less is known about the role of life satisfaction as a mediator between family functioning and resilience. Empirical investigations have established that life satisfaction serves a mediation role between family factors and individual well-being. For instance, based on a survey of 1,086 employees in the United States, Rode et al. (2007) revealed that satisfaction with their life mediated the effect of family-work role conflict on exit from the workplace. Besides, Urbanova et al. (2019) surveyed 2,844 Slovak adolescents and found that life satisfaction mediated part of the connection between the family socioeconomic situation and Internet overexposure. Nevertheless, there are few studies exploring the inter-relationships amongst perceived family functioning, life satisfaction, and resilience in adolescents, particularly the mediating role of life satisfaction.

1.5. The present study

There are several research gaps in the literature. First, while most related studies are Western studies, few attempts in Chinese societies have examined the predictors of child resilience, particularly family antecedents of resilience in children (Shek et al., 2005; Shek, 2010). In addition, Proctor et al. (2009) reviewed 141 empirical studies on youth life satisfaction and found that most research has been based on American culture, with most assessment measures constructed and validated in the U.S. sample, strongly supporting the need to conduct non-Western and cross-cultural research. Second, few studies have examined how well families are functioning in relation to resilience among adolescents during the course of the COVID-19 pandemic. The pandemic induced infection-related anxiety, social alienation, economic stress and uncertainty, posing many adaptation challenges to the general public (Shek et al., 2022a). Adolescents experiencing the "storm and stress" phase of puberty (Rosenblum et al., 2005, p. 584) may become more vulnerable when confronted with difficulties caused by the pandemic, such as the closure of schools and the unemployment of family members. Third, the role that life satisfaction plays in mediating the family functioning-resilience relationship remains understudied. Fourth, the vast majority of existing studies in this field are cross-sectional in nature, with relatively few longitudinal and large-sample studies. To address these research gaps, the present study aimed to investigate the mediating role of children's perceived life satisfaction between family functioning and resilience among Chinese children utilizing two waves of data collected separately before and during COVID-19. The research questions and hypotheses are presented below.

Research Question 1: Does family functioning predict resilience in children concurrently and longitudinally? Based on the "Family Resilience Theoretical Framework" (Walsh, 1996) as well as previous studies (Rosenblum et al., 2005; Sahanowas and Halder, 2019; Shek et al., 2022b,c), we proposed two hypotheses:

> *Hypothesis 1a*: family functioning would have a concurrent relationship with the child and adolescent resilience.
>
> *Hypothesis 1b*: family functioning would have a longitudinal relationship with the child and adolescent resilience.

Research Question 2: Does family functioning predict satisfaction with life concurrently and longitudinally? With reference to the family functioning models (e.g., McMaster model), and past studies

(Cacioppo et al., 2013; Botha and Booysen, 2014; Song et al., 2022), we developed two hypotheses:

> *Hypothesis 2a*: family functioning would have a positive concurrent prediction of children's life satisfaction.
>
> *Hypothesis 2b*: family functioning would positively predict children's life satisfaction across time.

Research Question 3: Does life satisfaction predict resilience in children concurrently and longitudinally? As suggested in previous studies (Sahin Baltaci and Karataş, 2015; Yakici and Zeliha, 2018; Karataş and Tagay, 2021), we established two hypotheses as follows:

> *Hypothesis 3a*: life satisfaction would have a positive concurrent prediction of resilience in children.
>
> *Hypothesis 3b*: life satisfaction would positively predict resilience in children longitudinally.

Research Question 4: Does life satisfaction mediate the predictive impact of family functioning on resilience in children over time? In light of the previous studies that supported life satisfaction as a mediator of family factors and various individual psychological outcomes (Rode et al., 2007; Urbanova et al., 2019), we proposed the following hypothesis:

> *Hypothesis 4*: children's satisfaction towards their life investigated at Wave 2 would mediate the prediction of family function reported in Wave 1 and child resilience examined at Wave 2.

2. Methods

2.1. Participants and procedures

We collected data from five schools in Chengdu, China through the cluster sampling method. As for location, one school in the city center, two in the southern suburbs, and two in the northern suburbs of Chengdu were selected. Concerning school level, two schools were elementary schools, one was junior high school, and two admitted both elementary and secondary school students, where the survey was open to all students. The initial round of data was obtained prior to the outbreak of the pandemic (i.e., from December 2019 to January 2020). The second round of data was gathered from June to July 2020 after schools resumed. In both waves of the survey, students filled out an identical questionnaire during class. For each class, a trained researcher was present during data collection to explain the study's purpose and answer students' questions, if any arose. Prior to participation, schools, parents, and students, all gave their informed consent accordingly. The survey received ethical approval from Sichuan University. The current study mainly focused on students from Grades 4 to 7. In total, 5,681 students participated in Wave 1 and 4,783 in Wave 2. The attrition rate was 15.8%, which is not particularly high and comparable to that of other large-scale surveys conducted with Chinese children and adolescents (e.g., China Family Panel Studies, CFPS). Some students were absent from Wave 2 data collection due to illness or other personal reasons. Attrition analysis revealed no notable differences in demographic characteristics between the matched respondents (i.e., those who participated in both Wave 1 and Wave 2) and the drop-out sample. The final dataset consisted of 4,783 students, with 47.2% girls ($n = 2,259$) and 51.7% boys ($n = 2,472$), with a 12-year average age at Wave 1. Among them, 98.2% of the participants were Han, while 0.7% were minority groups.

2.2. Measures

2.2.1. Family functioning

Family functioning was measured by the "Chinese Family Assessment Instrument" (C-FAI) (Shek, 2002a). Previous studies involving Chinese children have established the C-FAI's good psychometric properties in terms of validity, reliability, and measurement invariance (Shek and Ma, 2010a). The C-FAI consisted of 33 items that measured five aspects of family functioning, including "communication" (9 items), "mutuality" (12 items), "parental concern" (3 items), "parental control" (3 items), and "conflict and harmony" (6 items). Some sample items included "parents often communicate with children" (communication), "family members support each other" (mutuality), and "parents care about their children" (parental concern). We employed a 5-point Likert scale in all the items, where 1 indicating the most similar and 5 the most dissimilar. Positive items were reverse-coded so that higher scores indicated better family functioning. The C-FAI in the current investigation demonstrated good reliability, with Cronbach's alpha of 0.936 and of 0.944 at Wave 1 and Wave 2, respectively (refer to Table 1).

2.2.2. Life satisfaction

Life satisfaction was evaluated by the "Satisfaction with Life Scale" (SWLS) (Diener et al., 1985). Five statements reflecting a person's global life satisfaction were presented to the students to indicate the range of their agreement, such as "In most ways my life is close to my ideal," and "The conditions of my life are excellent." Responses were rated on a "6-point Likert scale" ranging from 1 for "strongly disagree" to 6 for "strongly agree." Higher scores signify elevated levels of satisfaction with life. The instrument has previously exhibited sound reliability and validity when administered to Chinese adolescents in past research (Zhu and Shek, 2020). For Waves 1 and 2 of the current study, Cronbach's alpha values were 0.759 and 0.814, respectively.

2.2.3. Resilience

Students' resilience was scaled by the "Resilience Subscale" of the "Chinese Positive Youth Development Scale" (CPYDS) developed and validated by Shek and Ma (2010b). This scale comprises 15 sub-scales evaluating key PYD attributes outlined by Catalano et al. (2004), such as "resilience," "emotional competence," "cognitive competence," and "self-efficacy." The resilience sub-scale consisted of six items that evaluated students' capacities to adapt and rebound from adverse experiences and arduous challenges on a six-point Likert scale

TABLE 1 Descriptive, correlational analyses, and reliability of scales.

Measures	α	Inter-item correlations	Mean	SD	Correlations							
					1	2	3	4	5	6	7	8
Age	--	--	12	1.16	--							
Gender[a]	--	--	--	--	−0.011	--						
Ethnic group[b]	--	--	--	--	0.004	−0.016	--					
RE W1	0.827	0.448	5.38	0.73	−0.045**	0.021	−0.003	--				
LS W1	0.759	0.429	4.5	1.11	−0.066***	−0.005	0.001	0.449***	--			
FFT W1	0.936	0.324	4.13	0.71	−0.009	0.058***	0.003	0.410***	0.345***	--		
RE W2	0.882	0.558	5.3	0.88	−0.111***	−0.013	−0.006	0.416***	0.344***	0.287***	--	
LS W2	0.814	0.500	4.41	1.22	−0.105***	−0.063***	0.015	0.299***	0.444***	0.268***	0.505***	--
FFT W2	0.944	0.373	4.12	0.74	−0.082***	0.040**	−0.004	0.303***	0.275***	0.511***	0.380***	0.388***

[a]1 = male, 2 = female; [b]1 = The Hans, 2 = Minorities; W1, Wave 1; W2, Wave 2; RE, resilience; LS, life satisfaction; FFT, family function. **$p < 0.01$; ***$p < 0.001$.

TABLE 2 Reliability of scales by grade.

Measures	Grade 4		Grade 5		Grade 6		Grade 7	
	Omega	α	Omega	α	Omega	α	Omega	α
FFT W1	0.80	0.78	0.82	0.80	0.84	0.83	0.82	0.80
FFT W2	0.79	0.77	0.83	0.81	0.82	0.81	0.85	0.83
LS W1	0.72	0.67	0.76	0.72	0.80	0.77	0.86	0.85
LS W2	0.78	0.75	0.81	0.79	0.86	0.84	0.87	0.86
RE W1	0.72	0.71	0.79	0.78	0.86	0.86	0.90	0.89
RE W2	0.78	0.78	0.85	0.85	0.90	0.90	0.93	0.93

RE, resilience; LS, life satisfaction; FFT, family functioning; W1, Wave 1; W2, Wave 2.

(1 = "strongly disagree," 6 = "strongly agree"), with higher scores reflecting greater resilience. A case in point for one item is "I do not give up easily when facing difficulties." The Cronbach's alpha was 0.827 at Wave 1 and 0.882 at Wave 2 in the present investigation.

2.2.4. Covariates

Gender, age, and ethnicity were all considered covariates in this study and were controlled in all models and analyses. Previous studies have indicated that these variables are likely to be correlated with family functioning and adolescent development (Shek et al., 2022b,c). As Sichuan Province's diverse population includes a number of minority groups, considering ethnicity helps in examining potential differences in experiences and perceptions between students from different ethnic groups. We created dichotomous variables for ethnic group (1 = Hans, 2 = Minority) and gender (1 = boy, 2 = girl).

2.3. Analysis

The analyses were conducted using SPSS 28.0. Initial data examination involved descriptive statistical analyses to assess the standard deviations, means, and correlations of the variables. Subsequently, hierarchical multiple regression analyses were executed to investigate the contemporaneous and longitudinal associations between the variables of interest, as described in Research Questions 1, 2, and 3. Additionally, we controlled for resilience at Wave 1 when exploring how resilience is affected longitudinal by family functioning as well as satisfaction with life. The mediation effect of life satisfaction (Research Question 4) was also analyzed using the PROCESS macro (Hayes, 2018) in SPSS. We calculated bias-corrected 95% confidence intervals using 5,000 re-samplings.

3. Results

3.1. Descriptive results

The descriptive statistics, reliability, and correlations of variables measured at two time points are exhibited in Table 1. With Cronbach's alphas greater than 0.759, all scales showed sound reliability. Separate analyses of the reliability at each grade also showed that the reliability measures were good at each grade, suggesting that the responses were not random (refer to Table 2). As expected, resilience was positively correlated with satisfaction with life and family functioning concurrently and longitudinally, with *r*s ranging between 0.299 and 0.505, *p*s < 0.001 (see Table 1). Age was negatively correlated with resilience with a small effect size ($r = -0.045$ at Wave 1, $r = -0.111$ at Wave 2, *p*s < 0.001), denoting that younger students reported higher levels of resilience. Although gender was not significantly related to resilience, girls tended to report better family functioning at both Waves ($r = 0.058$ at Wave 1, $r = 0.040$ at Wave 2, *p*s < 0.001) and lower life satisfaction compared to boys at Wave 2 ($r = -0.063$, $p < 0.001$), with small effect size. Ethnicity did not exhibit a statistically significant correlation with the research variables.

TABLE 3 Cross-sectional regression analyses for RE.

Model	Predictors	RE (Wave 1)					RE (Wave 2)				
		β	t	Cohen's f^2	R^2 change	F change	β	t	Cohen's f^2	R^2 change	F change
1	Age	−0.04	−3.04**	0.002	0.002	3.75*	−0.11	−7.66***	0.013	0.013	19.89***
	Gender[a]	0.02	1.38	0.000			−0.01	−0.95	0.000		
	Ethnic group[b]	0.00	−0.14	0.000			−0.01	−0.46	0.000		
2	FFT	0.41	30.58***	0.199	0.166	935.32***	0.38	27.83***	0.163	0.140	774.24***
	LS	0.45	34.21***	0.249	0.199	1170.21***	0.50	39.42***	0.327	0.247	1554.05***

In model 2, control variables were statistically controlled; measures of family function at Wave 1 and Wave 2 were included as predictors to predict resilience at Wave 1 and Wave 2, respectively. [a]1 = male, 2 = female; [b]1 = The Hans, 2 = Minorities; RE, resilience; FFT, family function; LS, life satisfaction. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

TABLE 4 Longitudinal regression analyses for RE.

Model	Predictors	RE (W2)					RE (W2)				
		β	t	Cohen's f^2	R^2 change	F change	β	t	Cohen's f^2	R^2 change	F change
1	Age	−0.111	−7.59***	0.012	0.013	19.59***	−0.091	−6.87***	0.008	0.170	960.70***
	Gender[a]	−0.015	−1.03	0.000			−0.025	−1.88	0.001		
	Ethnic group[b]	−0.007	−0.47	0.000			−0.007	−0.50	0.000		
	W1 RE						0.412	31***	0.204		
2	W1 FFT	0.29	20.68***	0.091	0.083	427.67***	0.15	10.08***	0.018	0.018	101.68***
	W1 LS	0.34	24.63***	0.129	0.114	606.44***	0.19	13.24***	0.031	0.030	175.38***

In model 2, control variables were statistically controlled. [a]1 = male, 2 = female; [b]1 = The Hans, 2 = Minorities; RE, resilience; FFT, family function; LS, life satisfaction. ***$p < 0.001$.

3.2. The predictive effect of family functioning and life satisfaction on resilience

After controlling for age, gender, and ethnicity, we found significant concurrent positive effects of family functioning on resilience at Wave 1 ($\beta = 0.41$, $p < 0.001$, Cohen's $f^2 = 0.166$, see Table 3) and Wave 2 ($\beta = 0.38$, $p < 0.001$, Cohen's $f^2 = 0.163$, see Table 3). Similar results were observed with respect to the prediction of satisfaction with life on resilience (Wave 1: $\beta = 0.45$, $p < 0.001$, Cohen's $f^2 = 0.249$; Wave 2: $\beta = 0.50$, $p < 0.001$, Cohen's $f^2 = 0.327$, see Table 3). Both family functioning and life satisfaction at Wave 1 exhibited statistically significant longitudinal influence on resilience at Wave 2 (β was 0.29 and 0.34, $ps < 0.001$, Cohen's f^2 was 0.091 and 0.129 for family functioning and life satisfaction, respectively, see Table 4). Furthermore, when Wave 1 resilience was added into the model, family functioning and satisfaction with life at Wave 1 continued to have significant positive predictions on resilience at Wave 2 over time (β was 0.15 and 0.19, $ps < 0.001$, Cohen's f^2 was 0.018 and 0.031 for family functioning and life satisfaction, respectively, refer to Table 4). The findings provided support for Hypotheses 1a, 1b, 3a, and 3b.

3.3. The predictive effect of family functioning on life satisfaction

Results of hierarchical multiple regression analyses indicated that after controlling for covariates, family functioning significantly and positively affected life satisfaction concurrently (Wave 1: $\beta = 0.35$, $p < 0.001$, Cohen's $f^2 = 0.135$; Wave 2: $\beta = 0.39$, $p < 0.001$, Cohen's $f^2 = 0.173$, see Table 5). Additionally, Wave 1 family functioning positively predicted life satisfaction at Wave 2 ($\beta = 0.27$, $p < 0.001$, Cohen's $f^2 = 0.081$, see Table 6). This prediction remained significant even after controlling for life satisfaction at Wave 1 ($\beta = 0.14$, $p < 0.001$, Cohen's $f^2 = 0.017$, see Table 6). There was evidence supporting Hypotheses 2a and 2b.

3.4. The mediation effects of life satisfaction

The mediation analysis *via* PROCESS findings is summarized in Table 7. Results showed that life satisfaction mediated the prediction of family functioning examined in Wave 1 on resilience in Wave 2. The indirect effect of family functioning on resilience through satisfaction with life was significant ($\beta = 0.12$, $p < 0.001$, see Table 7). The total effect of family functioning on resilience was also examined as significant ($\beta = 0.29$, $p < 0.001$), with the inclusion of the mediator the effect was still rendered a significant effect ($\beta = 0.17$, $p < 0.001$). These findings indicate that the association between children's perceived family functioning and individual resilience was partially mediated by satisfaction with life, supporting Hypothesis 4.

4. Discussion

The present study has several unique features. First, how Chinese children's resilience is shaped by factors at different levels has not been fully investigated, particularly the longitudinal influence of the family

TABLE 5 Cross-sectional regression analyses for LS.

Model	Predictors	LS (Wave 1)					LS (Wave 2)				
		β	t	Cohen's f^2	R^2 change	F change	β	t	Cohen's f^2	R^2 change	F change
1	Age	−0.07	−4.54***	0.004	0.004	6.92***	−0.11	−7.3***	0.011	0.015	24.39***
	Gender[a]	−0.01	−0.41	0.000			−0.06	−4.41***	0.004		
	Ethnic group[b]	0.00	0.11	0.000			0.01	0.95	0.000		
2	FFT	0.35	25.21***	0.135	0.119	635.34***	0.39	28.67***	0.173	0.147	821.84***

In model 2, control variables were statistically controlled; measures of FFT at Wave 1 and Wave 2 were included as predictors to predict LS at Wave 1 and Wave 2, respectively. [a]1 = male, 2 = female; [b]1 = The Hans, 2 = Minorities; FFT, family function; LS, life satisfaction. ***$p < 0.001$.

TABLE 6 Longitudinal regression analyses for LS.

Model	Predictors	LS (W2)					LS (W2)				
		β	t	Cohen's f^2	R^2 change	F change	β	t	Cohen's f^2	R^2 change	F change
1	Age	−0.106	−7.28***	0.011	0.015	24.31***	−0.076	−5.8***	0.006	0.193	1128.48***
	Gender[a]	−0.064	−4.4***	0.004			−0.062	−4.77***	0.004		
	Family intactness[b]	0.014	0.95	0.000			0.010	0.80	0.000		
	W1 LS						0.440	33.59***	0.239		
2	W1 FFT	0.27	19.48***	0.081	0.075	379.54***	0.14	10.03***	0.017	0.017	100.52***

In model 2, control variables were statistically controlled. [a]1 = male, 2 = female; [b]1 = The Hans, 2 = Minorities; FFT, family function; LS, life satisfaction. ***$p < 0.001$.

system on child development (Shek et al., 2019, 2020). Hence, this research advances comprehension of the intricate interplay between family dynamics and the development and flourishing of children by adopting a multi-dimensional measure of family functioning and using a longitudinal design. Second, this study focused on children with certain demographic characteristics in China's Sichuan province using a relatively large sample size. This contributes to our understanding of the related issues, and thus informs policies and interventions tailored to their specific developmental needs. Third, this study incorporated a mediational model, which allows for the examination of the underlying mechanisms through which family functioning influences children's development. Finally, this study was performed in the COVID-19 setting which is different from the non-COVID-19 context. As COVID-19 has exerted much stress on children and adolescents and their families (Shek, 2021a; Shek et al., 2023), this investigation constitutes an interesting addition to the discussion on this issue in the pandemic context.

For Research Question 1, the finding supports that children growing up in supportive, harmonious, and caring families are more inclined to stay resilient when exposed to adversity. The finding is congruent with prior studies demonstrating a beneficial link between healthy family functioning and children's resilience (e.g., Rosenblum et al., 2005; Wong, 2008; Sahin Baltaci and Karataş, 2015). For example, Wong (2008) reported that adolescent resilience was predicted by elevated perceptions of autonomous support and parental involvement. A survey conducted by Wu et al. (2014) with Chinese migrant youth also showed that family support predicted children's resilience, which in turn influenced their educational outcomes, such as academic effort and drop-out intention. As suggested by Self-Determination Theory (SDT), a supportive and harmonious family environment can help children develop a sense of personal control, build positive interpersonal connections, and strong confidence, which are all essential protective factors for resilience (Joussemet et al., 2008). It is noteworthy that while there are studies examining the influence of dyadic parent–child relational qualities on child resilience, relatively little research as to the effects of systemic family functioning on children's resilience has been conducted.

As to Research Question 2, the finding supports the concurrent and longitudinal prediction of family functioning on life satisfaction among children, which is in alignment with earlier studies (e.g., Cacioppo et al., 2013; Yuan et al., 2019). Chang et al. (2003) reported that perceived parental warmth and autonomy positively influenced the life satisfaction of their children, covering both kids and youth, in the Chinese context. Based on the Ecological System Theory (Bronfenbrenner, 1992), family settings are considered the most proximate and influential external circumstance on a child's growth and flourishing throughout childhood and early adolescence. Children raised in warm and caring family contexts receive emotional assistance to manage problems, resulting in reduced risks for unfavorable developmental outcomes and elevated rates of global life satisfaction.

Regarding Research Question 3, the study demonstrates that life satisfaction also predicted resilience in children concurrently and longitudinally, which is in alignment with the results of former studies (e.g., Sahin Baltaci and Karataş, 2015). For example, Karataş and Tagay (2021) found that life satisfaction positively and substantially predicted resilience. Henderson et al. (2013) also found that hedonic activity helped regulate emotion and would predict positive affect and vitality. Children who are contented with their lives are less prone to dwell on negative emotions, showing lower anxiety and depression symptoms and preserving positive coping resources. As argued by Cattan (2009), children who rated their life satisfaction at higher scores perceive a lower level of stress and possess a more positive

TABLE 7 Longitudinal mediating effect analyses of LS at Wave 2 (the mediators) for the effect of FFT at Wave 1 on RE at Wave 2.

Regression models summary			
	β	*SE*	*t*
Total effect of IV (FFT) on DV (RE)	0.29	0.02	20.68***
IV (FFT) to Mediator (LS)	0.27	0.02	19.48***
Mediator (LS) to DV (RE)	0.45	0.01	34.80***
Direct effect of IV (FFT) on DV (RE)	0.17	0.02	12.75***
Mediating effect	Point estimate	Bootstrapping (BC 95% CI)	
		Lower	Upper
	0.12***	0.11	0.14

RE, resilience; FFT, family function; LS, life satisfaction. ***$p < 0.001$.

outlook on the future and difficult conditions, which benefits their resilience development.

For Research Question 4, the results demonstrated that life satisfaction mediates the link between children's reported family functioning and children's resilience, which is consistent with other findings evincing close relationships between family dynamics, children's well-being and positive growth outcomes (Azpiazu Izaguirre et al., 2021; Zarei and Fooladvand, 2022). This result also aligns with previous research revealing an indirect influence of intimate relationships with parents on resilience mediated by life satisfaction (Khani et al., 2016). According to the Ecological Systems Theory (Bronfenbrenner, 1992), a child's development is shaped by the interactions of a complex system comprised of interconnected environments at various levels, including the child's characteristics, immediate family contexts, and broader cultural and social conditions. Children's life satisfaction *de facto* reflects their perceptions of the interactions between environments and suggests whether these environments can fulfil their developmental needs. Since few investigations have integrated family functioning, satisfaction with life, and resilience in a single study simultaneously, the present study is the pioneer in nature.

The present study presents theoretical implications. It highlights the significance of a well-functioning family in nurturing resilience and extensive well-being in Chinese children. According to prior studies, family functioning can significantly influence children's well-being, proactive growth, and maladaptive behaviors (Shek, 2002b, 2005; Shek and Liu, 2014). As few studies have focused on the effects of family functioning on children's resilience, the present study contributes to the development of theory in this field. Additionally, it highlights the importance of global satisfaction with life serving as mediation of the connection between family functioning and youth development. The discovery sheds light on how the functioning of a family impacts the well-being of children. Moreover, it suggests that contentment with life plays a significant role in determining how family functioning affects the development of children. This result is consistent with the Developmental Systems Theory (Ford and Lerner, 1992) and Ecological System Theory (Bronfenbrenner, 1992), which hold that a child's subjective well-being is a pivotal factor in the connection between perceived environmental circumstances and personal development.

This study has practical implications. It emphasizes the importance of family dynamics on children's life satisfaction and resilience, hence suggesting the need for family-based interventions that not only build children's resilience at the individual level but also enhance parent–child relationships at the family level. According to the Ecological System Theory (Bronfenbrenner, 1992), cultural and social norms are also significant surroundings that interact with the functioning of the family and the development of the child. However, traditional Chinese culture emphasizes respect for elders and authority, which may discourage children from expressing their opinions or emotions openly to their parents (Dou et al., 2020). Similarly, parents may conceal their concerns and worries from their children. These communication challenges can result in misunderstandings and conflicts, hampering the ability of families to properly support and encourage their children's stress coping when faced with adversity. As family-based interventions help to promote effective family communication, concern, and care among family members, and provide resources for families to overcome cultural barriers to effective communication (Shek, 2008), we have to take the unique attributes of Chinese families into account.

In addition, it highlights the essential function of satisfaction with life in fostering resilience in children. Possessing higher levels of satisfaction with life, which serve as a form of psychological well-being, can help children feel more confident and determined to overcome obstacles. Besides, Chinese parents frequently adopt a strict parenting style because discipline is considered key to children's future success. Employing data gathered from 550 Chinese parents, Leung and Shek (2013) found that paternal expectation of offspring's future prospects constitutes the strongest predictor of family functioning. Yet, overly strict parenting frequently results in a sole focus on children's academic accomplishment and a disregard for their subjective well-being, which increases academic stress and other maladaptive behaviors (Suldo and Huebner, 2004). Besides, different stakeholders highlighted that programs promoting positive psychological attributes are inadequate in Hong Kong (Shek et al., 2021). Hence, programs should be designed to help parents realize the critical nature of children's well-being and its beneficial correlation with academic resilience (Zeng et al., 2022).

Furthermore, since "resilience research has never strayed far from its translational agenda" (Masten, 2011, p. 493), the present findings are also relevant to other non-Chinese cultural contexts, particularly under COVID-19. As COVID-19 has a strong negative impact on mental health (Shek, 2021a,b; Shek et al., 2023), how to promote family functioning and life satisfaction are important keys for promoting psychological well-being under the pandemic. Furthermore, there is a need to promote resilience at different levels. As pointed out by Rania et al. (2022a), "empowerment is an individual and collective growing process" (p. 2). Hence, besides individual resilience, focusing on family resilience and societal resilience is also important.

Certain limitations are identified in the present study. First, single informant self-report measures were employed in the investigation, which may be biased due to social desirability and may not accurately represent family dynamics and child

development (King and Bruner, 2000). Multi-informant measurements, comprising both parent and child reports, would provide a more comprehensive picture. In addition, the sample was recruited from China's Sichuan region, which has diverse cultural and geographical conditions. The present study only took ethnicity into account. We suggest that future studies should consider other factors, such as language, socioeconomic status and cultural adaptation (e.g., Kennedy and Hue, 2011), to comprehend the complex interaction between cultural and individual factors that may affect family functioning and child development.

5. Conclusion

The present study purported to explore both the concurrent and longitudinal impacts of family functioning on children's resilience, as well as the mediating impact of satisfaction with life in the family functioning-resilience relationship. In line with the research hypotheses, results indicate that family functioning concurrently and longitudinally predicts children's resilience and support the mediation role of life satisfaction. This suggests the need for family-based interventions that promote a more supportive and stable family environment for children to grow and develop. There is also a need to nurture life satisfaction in adolescents.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by the Ethics Committee of Sichuan University (Approval code: K2020025; Approval date: 31 July 2020). Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

DS: conceptualization and funding acquisition. DS and DD: methodology and formal analysis. DS, DD, LZ, and LT: investigation. DD: data curation. DS, DD, and LT: writing – original draft preparation and writing – review and editing. DS and LZ: supervision and project administration. All authors have read and agreed to the published version of the manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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Resilience to depression: the role of benevolent childhood experiences in a South African sample

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Background: Studies elsewhere show that benevolent childhood experiences (BCEs) have protective mental health value. However, this protective value has never been investigated in an African context. Given the need to better understand what might support mental health resilience among African young people, this study explores the relationship between BCEs and depressive symptoms among a South African sample of young adults living in a community dependent on the economically volatile oil and gas industry.

Methods: A sample of young adults in an oil and gas community in South Africa (N = 313, mean age 20.3 years, SD = 1.83, range from 18 to 26; majority Black African) completed self-report questionnaires to assess BCEs and depressive symptoms (Beck Depression Inventory-II). The analysis controlled for socio-demographics and experience of family adversity. Multinomial logistic regressions were used to examine the association of BCEs with depressive symptoms using STATA 17.

Results: The majority (86.4% of the sample) reported all 10 BCEs. Of the 10 BCEs, having at least one good friend was the most reported (94%) compared to 75% of the sample reporting having a predictable home routine, such as regular meals and a regular bedtime. The unadjusted multinomial logistic regression analysis indicated that having at least one good friend, comforting beliefs, and being comfortable with self were associated with lower odds of moderate depression. The adjusted results showed no association between BCEs and the depression of young adults in this sample.

Conclusion: In this South African sample, our results do not show protective associations between BCEs and depression. This could be as a result of the homogeneity in our sample. It is also possible that the BCEs explored could not counteract the effect of chronic risk factors in the lives of the young people in this study context. Further research is needed to understand this complexity.

KEYWORDS

young adults, benevolent childhood experiences, resilience, South Africa, adversity

Introduction

Benevolent early life experiences, known as BCEs, are enabling experiences before the age of 18 that foster positive perceptions of safety, security, connectedness, and predictability during development (Narayan et al., 2018). BCEs, such as access to supportive adults or having good neighbors, have been found to have a positive impact on the development and well-being of adults who were exposed to hardship during their childhood (Narayan et al., 2018; Crandall et al., 2019; Daines et al., 2021). For this reason, BCEs are associated with resilience (i.e., the capacity for positive outcomes – such as mental health – despite exposure to significant risk; Masten, 2014). However, little is known about the potential long-term protective effects of BCEs on the mental health outcomes of young adults in South Africa. This paper redresses this existing research gap among a sample of emerging adults aged 18–26 years old.

The mental health outcomes of adolescents and youth globally are an important cause for concern, with mental health disorders contributing significantly to the global burden of disease (Wies et al., 2021). Depression, which is a leading contributor to this burden, has shown alarming upward trends among youth (Thapar et al., 2022). While only a limited number of studies have investigated mental illness among young people in sub-Saharan Africa (Steel et al., 2022), a narrative review of 37 of these studies showed a median point depression prevalence of 26.9% for sub-Saharan young people aged 10–19 in general and 29% for those with experiences of significant risk exposure (e.g., violence or poverty) (Jörns-Presentati et al., 2021). This incidence is comparable to that reported in global prevalence studies (Shorey et al., 2022). Protecting the health and well-being of young adults is important, not least because this has been linked with socio-economic development (Nyundo et al., 2020). This is because of the association between the mental health of youth cohorts and other outcomes such as their self-esteem, interaction with their family members and peers, and gainful employment.

Likewise, there is concern about the mental health of South African young people. The available nationally representative data on mental health in South Africa comes from the National Income Dynamics Study (NIDS). The 2014–2015 data reveals that 26% of the population have significant depressive symptoms (Mungai and Bayat, 2019), which is similar to the prevalence among youth aged 15–24 (Somefun and Simo Fotso, 2020). Despite the high prevalence of depression among young people in South Africa, significant barriers exist in accessing mental health services (Craig et al., 2022). Stigma surrounding mental health issues is widespread, particularly in rural areas, and many young people may be reluctant to seek help due to fear of discrimination or judgment (Guttikonda et al., 2019). The shortage of mental health professionals and limited resources also make it challenging for young people to access adequate treatment and support in South Africa (Mokitimi et al., 2019). Studies have posited that prevention of mental health disorders is important because of the effect they have in later adulthood (Sorsdahl et al., 2021).

The causes of depression among youth in South Africa are diverse and complex. Socioeconomic factors such as poverty, unemployment, and social inequality are significant contributors to depression among young people (Hatcher et al., 2019; Somefun and Simo Fotso, 2020). Many young people in South Africa experience high levels of stress and anxiety due to the challenges of daily life, including violence, crime, and social isolation (Scorgie et al., 2017; Sui et al., 2021). In addition to the external factors contributing to depression, there are also internal factors that can lead to depression among young people. Genetic predisposition (Alshaya, 2022), past traumatic experiences, and chronic stress (Thapar et al., 2022) can all increase the risk of developing depression. The impact of the COVID-19 pandemic has also contributed to the increase in depression among young people in South Africa (Haag et al., 2022). The pandemic has resulted in increased social isolation, economic uncertainty, and disrupted education, which has taken a toll on the mental health of young people (Theron L. et al., 2021).

The protective role of benevolent childhood experiences

Missing in the literature about the depression of emerging adults in South Africa is the effect of BCEs on the mental health of young adults in South Africa. In particular, it is unclear whether experiences of benevolence during childhood can protect against the development of depression in young adulthood in South Africa. As noted earlier, BCEs are favorable childhood experiences (i.e., from birth to the age of 18), including but not limited to a stable and supportive family environment, access to quality education, positive peer relationships, opportunities for creative expression and play, healthy nutrition, and safe living conditions (Narayan et al., 2018, 2023). BCEs are critical to a child's overall development and well-being, providing a foundation for future success and resilience. Aligned with social-ecological and multisystemic approaches to resilience (Ungar and Theron, 2020; Masten et al., 2021), BCEs shift the focus away from the individual child and their inherent strengths to resources in the child's everyday life that enable wellbeing. Unlike family adversity, BCEs are usually not associated with the socioeconomic status of the individual (Hou et al., 2022).

Theoretically, Narayan et al. (2021) argue that childhood experiences exert a formative and enduring influence on adaptation and maladaptation throughout the lifespan and across generations. Other theories confirm that benevolent childhood experiences serve as protective factors against depression and anxiety. The multisystemic resilience framework (Zimmerman, 2013; Masten and Cicchetti, 2016; Ungar and Theron, 2020; Ungar, 2021), which frames the study we report, and the positive youth development framework (Lerner et al., 2009) adopt multisystem-informed and strength-based approaches. These frameworks highlight the strengths within children and systems in their surrounding environments, including family, school, and neighborhood, as crucial elements in safeguarding them from risks and facilitating their adaptation in the face of adversity.

For instance, in a study focused on family system factors and conducted in the United States, it was found that strong parental support and minimal parent–child conflict, reflecting parental approval, were significantly associated with enhanced mental health outcomes among adolescents (Chen and Harris, 2019). Similarly, schools represent an important environment where children spend a significant amount of their time during late childhood. A Study using Census data from the National Longitudinal Study of Adolescent Health in the United States showed a correlation between negative school experiences, particularly peer rejection and bullying, and the development of depression and anxiety among adolescents (Coley et al., 2018). Another United States-based study found that a strong

sense of school connectedness reduces the likelihood of young people experiencing adolescent depression and anxiety (Shochet et al., 2006). At the community level, experiencing victimization has been linked to a higher likelihood of depression among young adults in South Africa (Somefun et al., 2023). This finding contrasts with a study conducted among adolescents, which found that a high level of neighborhood efficacy, measured as trust in the neighborhood, did not directly impact depressive symptoms in adolescents (Choi et al., 2021).

Other studies show that BCEs have a profound impact on an individual's mental and emotional well-being in adulthood. For example, a study by Narayan et al. (2019) explored the benefits of BCEs and fathers' perspectives among pregnant women in the United States. The study aimed to identify BCEs and other positive experiences that these families had, in order to develop interventions that build on their existing strengths and resources. The authors concluded that therapeutic interventions that leverage BCEs and involve fathers can promote resilience and positive outcomes for low-income families. Another study (Merrick et al., 2019) working with an ethnically diverse homeless adult population in the United States found that BCEs were associated with several positive outcomes, including lower levels of psychological distress and parenting stress, and higher levels of perceived social support. Similar results were found among a sample of university students in Western USA during the early stages of the pandemic (Doom et al., 2021). Using an online survey, this study found that BCEs were associated with wellbeing during the pandemic, including lower levels of depression and loneliness. Using an online survey to collect data from a large sample of US adults (18–58 years) during the early months of the pandemic, (Doom et al., 2021) highlighted that the COVID-19 pandemic may have exacerbated the impact of childhood experiences on mental health outcomes, and that both adverse and positive childhood experiences may be associated with stress and uncertainty. They also suggest that interventions aimed at promoting BCEs may be an effective way to support resilience and well-being during and after the pandemic. This implies that individuals who report more BCEs are less likely to experience mental health issues, such as anxiety and depression, and more likely to have higher levels of well-being.

A study with 275 adults living in Scotland reported similar positive associations between BCEs and wellbeing (Karatzias et al., 2020). Specifically, BCEs were associated with fewer disturbances in self-organization (e.g., a negative self-concept or emotional dysregulation). BCEs were similarly protective of psychological wellbeing in a study with 1816 undergraduate university students in China (Hou et al., 2022). Another Chinese study, this time with a large sample of students (average age: 20) from the cities of Xuzhou, Nanjing and Wuhan, reported an association between higher levels of BCEs and lower levels of depression and suicidal ideation. Overall, international studies confirm the protective effects of BCEs on young adult/adult mental health and call for greater facilitation of BCEs.

In summary, BCEs are believed to shape the development of essential psychological and emotional skills during childhood. They support the development of positive factors such as healthy attachment, emotional regulation, and interpersonal relationships that provide a solid foundation for adaptive coping mechanisms and resilience. These foundational skills are crucial in navigating challenges and reducing the risk of developing depressive symptoms later in life. They also act as protective factors against the onset and progression of depression. Supportive and nurturing environments during childhood foster a sense of security, belonging, and self-worth, which in turn can buffer individuals against stress, adversity, and negative life events. By promoting psychological well-being and fostering a positive self-image and sense of belonging, BCEs can reduce the vulnerability to depressive symptoms.

The present study

As demonstrated, although there is international empirical evidence that BCEs protect mental health, no such empirical study has yet been conducted in sub-Saharan Africa, including South Africa. Understanding the potential protective role of BCEs on depression among young adults in South Africa is crucial given the high prevalence of depression and scarcity of professional mental health support in this country. It is also important because promoting BCEs can be a cost-effective way to prevent mental health challenges from developing in the first place. Investing in interventions and programs that support BCEs can help promote mental health and prevent mental health challenges. By preventing mental health challenges from developing in the first place, we can reduce the need for more expensive interventions, such as mental health treatments and hospitalizations.

The aim of this article is to examine the apparently protective BCE-depression relationship, using a sample of young adults from a structurally violent community in South Africa. Young people in stressed South African communities are potentially more vulnerable to depression and have less access to mental health services than those in more privileged communities (Mindu et al., 2023). To achieve this aim, we examine the combined effect of BCEs on depression and also examine the influence of single BCEs on depression. We anticipated that higher levels of total BCEs would have significant protective effects given the understanding that more resources (e.g., more BCEs) are typically associated with better youth outcomes (Merrick et al., 2019; Doom et al., 2021; Hou et al., 2022). Given the prominence of relational resources – especially nurturing or mentoring care from an adult – to the resilience of South African young people (Van Breda and Theron, 2018), we hypothesized that two specific BCEs (i.e., being safe with a caregiver and having a supporting adult or caregiver) will show significant protective associations with the depression outcomes of young adults in our sample. In summary, we aim to answer the following questions:

What is the relationship between protective factors (BCEs) and depression in young adults from a structurally violent community in South Africa?

Do higher levels of total BCEs have a significant protective effect on depression?

Do specific BCEs, such as feeling safe with a caregiver and having a supporting adult, show significant protective associations with depression outcomes in young adults?

By doing so, this article seeks to contribute to the growing body of research on the importance of early life experiences for mental health outcomes in emerging adulthood in South Africa.

Method

Procedure

We used data from the Resilient Youth in Stressed Environments (RYSE) study. The RYSE study was a 5-year (2017–2022) study that

investigated the resources that support youth resilience in stressed communities in Canada and South Africa (Ungar et al., 2021). Ethical approval was obtained from the Institutional Review Boards of the universities where the principal investigators are affiliated in Canada (Health Sciences Research Ethics Board, Dalhousie University, #2017-4321) and South Africa (Faculty of Health Sciences Research Ethics Committee, University of Pretoria, #UP17/05/01).

This paper focuses on the data collected in South Africa because of the paucity of research examining benevolent childhood experiences of young people in African contexts. The target communities, Secunda and eMbalenhle, for this study were communities that were chiefly dependent on the local oil and gas industry and were vulnerable to the risk associated with boom-and-bust economic cycles (Ungar et al., 2021). At the time of the study, young adults in the study sites faced a myriad of challenges such as high rates of unemployment, structural violence, family conflicts, exposure to poverty and lack of access to basic services and related violent protests. As in many resource-constrained communities in South Africa (Canham, 2018), these challenges are chronic. Their effects are also potentially worse for emerging adults seeking to fulfill developmental milestones, such as finding stable employment or starting a family, with many emerging adults reporting related psychological distress (Theron L. C. et al., 2021; Theron and Ungar, 2022).

Participants meeting specific eligibility criteria were intentionally recruited by study gatekeepers. These criteria included being between the ages of 14 and 24 at baseline, residing in either of the study communities, having direct or indirect experience (positive or negative) of petrochemical industry impacts (such as personal or family layoffs related to the industry or involvement in industry-sponsored community investment programs), and possessing English literacy skills. To reach a wider audience, the study team advertised the research, including the inclusion criteria, in local schools and popular shops. Furthermore, participants were given the opportunity to nominate eligible peers for potential inclusion in the study.

Trained research assistants administered the survey to participants who had consented to be part of the RYSE study. Mostly, this was accomplished through face-to-face interactions using interview-style methods for data collection.

Participants

The 2018 survey sample included a total of 600 young people aged 14–24. For the purposes of this paper, we focused on the young adults (18–26-year-olds) in this sample ($n = 313$) since the aim was to investigate the association between BCEs (experienced before the age of 18) and depression. The mean age of the current sample was 20.31 (SD = 1.83). There was a similar distribution of females ($n = 159$, 51.3%) and males ($n = 150$, 48.4%). Most participants self-identified as being Black/African ($n = 307$, 98.4%).

Measures

Depression

We used the Beck Depression Inventory-II (Beck et al., 1996) to measure depression symptoms in the two-week period before the survey. The BDI-II is a widely used 21-item self-report inventory measuring the severity of depression in adolescents and adults. This instrument has been validated among University students in South Africa (Makhubela and Mashegoane, 2016). It has 21 items specific to a symptom of a depression with a 4-point (0–3) scale to examine severity. The reliability coefficient was satisfactory, $\alpha = 87$. Items were summed up and categorized as per the inventory's manual: 0–13 "Minimal depression," 14–19 "Mild depression," 20–28 "Moderate depression" and 29–65 "Severe depression."

Benevolent childhood experiences

To measure BCEs, we used the (Narayan et al., 2018) original BCEs scale (Narayan et al., 2018). This scale is a checklist of 10 positive childhood experiences occurring between birth and 18 years. The items in this scale include (1) having at least one safe caregiver, (2) having at least one good friend, (3) having beliefs that gave comfort, (4) enjoying school, (5) having at least one teacher who cared, (6) having good neighbors, (7) having an adult (not a parent/caregiver) who could provide support or advice, (8) having opportunities to have a good time, (9) having a positive self-concept, and (10) having a predictable home routine. Answers to these questions were dichotomous (Yes or No). Items were summed with higher scores indicating higher experience of BCEs.

Family adversity

We adapted the Life events questionnaire by Labella et al. (2019). Participants were asked 10 questions measuring different types of adversities. These questions measured experience of adverse events in the family such as death, divorce/separation of parents, violence, parental mental and physical illness, foster parenting, and parental incarceration. Responses were binary (yes and no) and the sum score range from 0 to 10. Items were summed and higher scores indicated high levels of family adversity.

Covariates

Age (continuous) and gender (female vs. male) were included in the analysis.

Statistical analysis

Descriptive analyses were used to examine the frequency distribution of the variables used in the study. We then used multinomial logistic regression to determine the unadjusted association between BCEs and depression. Unadjusted regression is used when there are no confounding variables or when the goal is to examine the relationship between two variables without controlling for other potential factors. The adjusted regression, on the other hand is used when there are potential confounding variables that might affect the relationship between the independent and dependent variables. By adjusting for these confounding variables, the regression model can better isolate the true relationship between the independent and dependent variables.

This was done in two models. In the first model, we examined the association between a composite measure of BCEs (i.e., a total BCE score) and depression and in the second model, we examined the

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TABLE 1 Descriptive statistics among study variables.

Variable	Frequency (%)	Mean (SD)
Depression (Full sample)		13.20 (8.64)
Minimal	168 (56.38)	7.07 (3.50)
Mild	67 (22.48)	15.93 (1.64)
Moderate	43 (14.43)	23.60 (2.41)
Severe	20 (6.71)	33.35 (2.87)
Felt safe with caregiver		
No	13 (4.17)	
Yes	299 (95.83)	
Had at least one good friend		
No	20 (6.41)	
Yes	292 (93.59)	
Comforting beliefs		
No	32 (10.26)	
Yes	280 (89.74)	
Liked school		
No	72 (23.08)	
Yes	240 (76.92)	
Teacher who cares about you		
No	43 (13.78)	
Yes	269 (86.22)	
Good neighbors		
No	67 (21.47)	
Yes	245 (78.53)	
Had adult (not parent/caregiver) who could give support or advice		
No	30 (9.62)	
Yes	282 (90.38)	
Opportunities to have a good time		
No	39 (12.58)	
Yes	271 (87.42)	
Liked or felt comfortable with self		
No	12 (3.85)	
Yes	300 (96.15)	
Had a regular routine		
No	78 (25.00)	
Yes	234 (75.00)	
Family adversity		
Low	83 (27.21)	
High	222 (72.79)	
Gender		
Female	159 (51.46)	
Male	150 (48.54)	
Age		20.31 (1.83)

association between each individual BCE item and depression. The minimal depression sub-group served as the reference category in each model. Multinomial logistic regression is an extension of binary logistic regression that allows for more than two categories of the dependent or outcome variable. This model also uses maximum likelihood estimation to evaluate the probability of categorical membership, like binary logistic regression. It does not assume normality, linearity, or homoscedasticity (Starkweather and Moske, 2019). All analyses were conducted using STATA statistical software version 17.

TABLE 2 Unadjusted association between BCE total score and depression (Model 1 unadjusted).

Depression Minimal depression (RC)	RRR	95% CI
Mild depression		
BCE	0.82	0.43–1.53
Family adversity	1.27	0.66–2.43
Gender	0.80	0.44–1.45
Age	0.91	0.77–1.08
Moderate depression		
BCE	0.41**	0.17–0.97
Family adversity	1.95	0.83–4.60
Gender	0.40	0.19–0.84
Age	1.02	0.84–1.25
Severe depression		
BCE	0.90	0.30–2.64
Family adversity	1.16	0.37–3.58
Gender	0.09***	0.02–0.42
Age	1.09	0.82–1.45

**$p < 0.05$; ***$p < 0.01$. Blank items are reference categories.

Results

As summarized in Table 1, most young adults reported minimal to mild symptoms of depression. Most reported positive childhood experiences as well as high levels of family adversity. 86.4% of the sample reported all 10 BCEs.

Model 1 investigated the unadjusted association between the composite measure of BCEs and depression. As shown in Table 2, there was no significant association between the combined BCE scores and depression. Participants with high BCEs had lower odds of being moderately depressed compared to their counterparts with low BCEs, but this association was not statistically significant.

Model 2 (see Table 3) investigated the unadjusted association between individual BCE item scores and depression. As shown in Table 3, three specific items (i.e., having at least one good friend, comforting beliefs, and being comfortable with themselves) were significantly associated with lower odds of moderate depression.

Table 4 shows the adjusted association between the combined BCE scores and depression. There was no significant association between combined BCE scores and depression. Gender was significantly associated with moderate and severe depression: young males had lower odds of depression compared to their female counterparts.

For the adjusted association (Table 4), there was no significant association between individual BCE item scores and depression.

TABLE 3 Unadjusted association between individual BCE item scores and depression (Model 2 unadjusted).

Depression Minimal depression (RC)	RRR	95% CI
Moderate depression		
Had at least one good friend	0.25***	0.08–0.75
Comforting beliefs	0.33**	0.12–0.89
Liked or felt comfortable with self	0.17**	0.03–0.82

**$p < 0.05$; ***$p < 0.01$. Blank items are reference categories.

TABLE 4 Adjusted association between BCE total score and depression (Model 1 adjusted).

Depression Minimal depression (RC)	RRR	95% CI
Mild depression		
BCE	0.75	0.40–1.38
Family adversity	1.25	0.65–2.38
Gender	0.79	0.45–1.40
Age	0.90	0.77–1.06
Moderate depression		
BCE	0.40	0.17–0.97
Family adversity	1.82	0.78–4.23
Gender	0.45*	0.22–0.91
Age	0.96	0.80–1.16
Severe depression		
BCE	0.81	0.29–2.25
Family adversity	1.24	0.42–3.63
Gender	0.09***	0.02–0.40
Age	1.04	0.81–1.33

*$p < 0.1$; ***$p < 0.01$. Blank items are reference categories.

Discussion

This study examined whether reported BCEs were associated with depression levels reported by young adults in the South African RYSE sample. No previous African study has explored the potentially protective effects of BCEs for African young adults. In African contexts, including South Africa, young people in chronically resource-constrained communities are at elevated risk for depression and have little access to mental health supports (Tomita et al., 2017; Haag et al., 2022). This reality compels attention to ordinary resources (like BCEs) that might mitigate this mental health risk.

Studying benevolent childhood experiences (BCEs) and their relationship with depression among young adults in a violent and chronically disadvantaged setting in South Africa is crucial for several reasons. Firstly, by examining the role of BCEs in this setting, we can gain insights into the potential protective factors that may mitigate the negative impact of violence and ongoing disadvantage on adolescent mental health. Exposure to violence and ongoing disadvantage are associated with continuous traumatic stress (Eagle and Kaminer, 2013). Put differently, we can identify which BCEs, if any, have a mental health advantage when young people are exposed to continuous traumatic stress Identifying specific BCEs that are associated with lower rates of depression can inform interventions and programs aimed at promoting resilience and well-being in similar contexts.

In addition, this research contributes to the growing body of literature on the impact of childhood experiences on mental health outcomes, particularly in challenging environments. It provides an opportunity to expand our understanding of the complex interplay between BCEs, violence, and depression among young adults, filling gaps in knowledge and enriching the field of mental health research. This is particularly important when exposure to significant stress is protracted.

Our results are unexpected. There was no support for our expectation that young people reporting higher cumulative levels of BCEs would report better mental health, even though young people reported high levels of BCEs. This finding is surprising given the widespread poverty, violence, and other challenges that many South African children face and the understanding that socioeconomic context can negatively impact access to childhood resources, such as caring parents or predictable family routines (Conger and Donnellan, 2007). However, several factors may explain why these young adults reported benevolent experiences in their childhood.

Firstly, South Africa has a rich cultural tradition that places a strong emphasis on community and family (Ramphele, 2012). This cultural emphasis may have contributed to the positive childhood experiences reported by the emerging adults in this study. For example, close family ties and social support from extended family members may have provided a buffer against the negative effects of poverty and other stressors.

Secondly, the emerging adults in this sample may have been more likely to perceive their childhood experiences positively due to a cognitive bias known as the "positivity effect." The positivity effect refers to the tendency for individuals to remember and focus on positive events and experiences more than negative ones (Reed and Carstensen, 2012). This bias may have influenced the way that the emerging adults in this study remembered and reported their childhood experiences, leading to an overestimation of benevolent experiences.

Finally, it is possible that the emerging adults in this sample reported high benevolent childhood experiences because of social desirability bias. Social desirability bias refers to the tendency for individuals to present themselves in a positive light in social situations (Latkin et al., 2017). The emerging adults in this study may have felt pressure to report positive childhood experiences in order to conform to social norms and expectations.

Regarding our surprise that BCEs showed no significant protective effects, it is possible that cumulative positive childhood experiences were not sufficient to mitigate the compound risks participants were exposed to and experienced (i.e., a chronically stressed community in combination with high levels of family adversity). Because this exposure continued into early adulthood (a demanding developmental stage that is associated with heightened psychological distress when developmental milestones cannot be met; Arnett, 2000), it possibly negated the protective effects of a healthy childhood. There has been some concern that resilience studies that focus narrowly on single adaptive outcomes (e.g., negligible symptoms of depression) might have misrepresented the notion that resilience is commonplace (Infurna and Luthar, 2018). Perhaps the opposite applies in this case: BCEs might have demonstrated protective effects if we had investigated more than a single adaptive outcome, or at least an outcome that might fit better to the studied context.

We posited that feelings of safety and adult support would have pronounced protective mental health effects for young adults in our sample compared to other BCEs. Our expectation related to the prominence of relational resources – especially nurturing or mentoring care from an adult – to the resilience of South African young people (Van Breda and Theron, 2018), including older adolescents'/young adults' mental health (Theron et al., 2022). However, the BCEs associated (albeit non-significantly) with lower levels of depression for young adults in our study were: having at least one good friend, comforting beliefs and being comfortable with oneself. Certainly, prior resilience studies in South Africa do acknowledge the enabling value of personal strengths (such as self-acceptance; Van Breda and Theron, 2018), good friends (with emphasis on these friends being trustworthy and prosocial; e.g., Van Breda and Dickens, 2017; Singh and Naicker, 2019) and comforting beliefs (typically faith-based ones; e.g., Mhaka-Mutepfa and Maundeni, 2019). Given this, we were surprised that the association reported was non-significant.

Overall, we wondered whether we might have found significant associations for the cumulative BCEs and/or single BCEs if the scale had included additional positive childhood items that resonate with African culture. The measured BCEs may not have been context specific enough or too broad to have captured important nuances in participants' experiences. For instance, African children are socialized to value interdependence with people beyond their immediate social connections (family, friends, neighbors and teachers), to appreciate organized religion and spiritual practices (Brittian et al., 2013; Balton et al., 2019), and to engage in cultural rituals (e.g., coming of age celebrations) (Ramphele, 2012). All the aforementioned are potential sources of positive childhood experiences not documented in the Narayan et al. (2018) BCE scale. Similarly, African children in resource-constrained communities might not be familiar with daily routines that include regular mealtimes, but they are likely to be familiar with daily routines that include opportunities to contribute constructively to their household (e.g., chores) and to engage informally in cultural/sporting activities with other children in the neighborhood. It would be valuable to trial BCE items that better fit African children's context and determine the associations of such contextually relevant items with mental health outcomes.

The multisystemic resilience literature is encouraging attention to resources in the physical environment, too (Ungar and Theron, 2020). This relates to growing understandings that the built environment (e.g., quality housing) and natural environment (e.g., green spaces to play) matter for young people's positive outcomes (Adams et al., 2017; Pillay, 2017). Children's positive childhood social experiences are often intertwined with these spaces (e.g., opportunities to play; Adams et al., 2017). It might, therefore, be valuable to adapt the BCE scale so that is both contextually relevant and appreciative of the spaces/places that facilitate positive childhood experiences (e.g., Have you had spaces where you could play safely?).

Limitations

It is possible that our small sample size was not large enough to reveal any statistical power between the variables. When a sample size is too small, the study may lack sufficient statistical power to detect a significant relationship or difference between the variables, even if there is a true effect (Faber and Fonseca, 2014). In other words, the sample size may not be large enough to provide a reliable estimate of the true population parameters. Another reason for these results could be that young adults experiencing depression may have negative biases in how they recollect issues that took place during their early childhood which may result in remembering more negative experiences compared to positive ones. In addition, majority of our sample reported high BCEs which highlights the homogeneity of the population sampled and may the reason why the results showed no significant differences.

Conclusion

Previous studies have suggested that BCEs may have a significant positive impact on mental health outcomes (Narayan et al., 2019; Karatzias et al., 2020; Doom et al., 2021; Hou et al., 2022), but our findings did not support this hypothesis. Our study, which was the first to use a sample of youth in South Africa to examine these associations, encourages attention to how context might shape the protective effects of BCEs. While BCEs may play a role in shaping cultural and social identity, they may not have a significant impact on mental health outcomes in the absence of other factors like large-scale redress of structural violence. Further research is needed to better understand the complex interplay of cultural, social, and psychological factors that inform contextually meaningful BCEs and contribute to mental health outcomes among youth, also in Africa.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Health Sciences Research Ethics Board, Dalhousie University, #2017-4321 and Faculty of Health Sciences Research Ethics Committee, University of Pretoria, #UP17/05/01. The patients/participants provided their written informed consent to participate in this study.

Author contributions

OS and LT contributed equally to the conceptualization of the manuscript and the background of the study. OS was responsible for the data analysis and interpretation of results. LT and JH contributed to the interpretation of the results. All authors of the manuscript contributed to the study design, data collection, data analysis, interpretation of results, manuscript preparation, involved in the manuscript preparation, reviewed, and approved the final version of the manuscript for submission.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Psychological, social, and physical ecologies for child resilience: a South African perspective

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Children live in a complex world surrounded by global concerns such as climate change, economic instability, threats of terrorism and war. However, in South Africa, one may note that children face several additional challenges including high unemployment rates in families, exposure to violence, living in conditions of poverty, exposure to HIV/AIDS, and high levels of orphanhood. Compounding these problems is the economic situation in the country where the government is unable to provide adequate support for children in various domains. Understanding the mechanisms through which children successfully adapt to their environments and transition into adulthood are important to understand. Resilience research seeks to understand these mechanisms and underlying processes that enable some individuals to recover from adversity against all odds. Therefore, there is an increased movement not only toward understanding resilience processes in children, which enable them to develop into fully functional and upstanding citizens of society despite the adversities they face, but also how resilience research can be translated into practice to be used by service professionals such as psychologists, school counselors, social workers, and teachers. Adopting a socioecological understanding of resilience, the author reviews literature on the psychological, social, and physical ecologies for child resilience globally. Special emphasis is placed on the ecologies of child resilience within the African context and South Africa in particular. A socioecological perspective positions child resilience within four important levels, namely individual, relationships, community, and society. The salient features of child resilience within a South African context are discussed within the four levels highlighting the implications for interventions to promote child resilience. The implications have global value because child resilience is a phenomenon that needs global attention.

KEYWORDS

Africa, child resilience, physical, psychological, social, socioecological

Background and introduction

With an increasingly complex world that children are part of, including concerns such as climate change, economic instability, threats of terrorism and war (Masten, 2018), understanding the mechanisms through which children successfully adapt to their environments and transition into adulthood are important to understand (Norris and Norris, 2021). Resilience research seeks to understand these mechanisms and underlying processes that enable some individuals to recover from adversity despite the adversity (van Breda and Theron, 2018). Although numerous debates around the definition of resilience exist (Masten, 2018; Van Breda, 2018, p. 4) define it as "the multilevel processes that systems engage in to obtain better-than-expected outcomes in

the face or wake of adversity." In South Africa, youth face several challenges including high unemployment rates, exposure to violence, living in conditions of poverty, and high levels of orphanhood (Ebersöhn, 2017; van Breda and Theron, 2018). Compounding these problems is the economic situation in the country where the government is unable to provide adequate support, in various domains, to young people and there is great concern for their health and well-being (van Breda and Theron, 2018). Therefore, there is a need for professionals such as psychologists, social workers and school principals to develop and use resilience-based programs for children (van Breda and Theron, 2018).

At the forefront of this movement, Ungar and Theron (2020) advocate for a socioecological understanding of resilience, that is resilience as understood not only as intrinsic factors of the individual, but also factors that exist in the individual's contextual realities including the cultural norms that influence their resilience processes. They argue that mental health researchers agree that "systemic influences matter at least as much as individual factors to positive outcomes" (Ungar and Theron, 2020, p. 441). They advocate for an understanding of resilience that includes the complex interactions of an entire biopsychosocial ecological system comprised of systems of one's biology, psychology, social networks, built environment and natural environment. Similarly, Theron (2019, 2020) argues that resilience research needs to be sensitive to varied contexts of young people and how resilience processes may differentially impact young people depending on these unique contexts. Hatala et al. (2020, p. 10) argue along the same lines stating that "it remains crucial to understand youths' resilience from a relational worldview that encompasses the context, the mental, emotional, physical and spiritual connections with land and nature, as well as the unique interactions and structural impediments to well-being and resilience." In the South African context Ebersöhn (2017) argues that the health and well-being outcomes for young people in an unequal society are relevant to educational research. This means that the emphasis should be on improving psychological, social, and educational well-being.

Taking the above into consideration the literature review that follows focuses on a central research question: What are the psychological, social, and physical ecologies for child resilience in South Africa and the implications for child resilience interventions? The review is structured into three broad ecologies of resilience: psychological, social, and physical. Each part discusses the extant literature internationally, in sub-Saharan Africa (SSA) and in the South African context. It is imperative to note that all three categories are interactive and interdependent and not linear in function but are presented separately just for clarity in this paper.

Methods

This study utilized a narrative review framework to gather published studies in the area of resilience in relation to children both in a local South African context as well as internationally.

Search, selection, and review method

The protocol followed during the literature search was explicitly focused on published studies in academic journals. This focus was intentional in order to collate studies that focused on particular ecologies of child resilience. The primary databases used to source international literature were SCOPUS and Web of Science. Key words included in searches, in varying combinations, were "child resilience", "mental health", "social well-being", "physical ecologies", "socioecological resilience", and "green spaces". Search results were filtered to only include journal articles. Initially search results were limited to 2017 onwards, thus most of the literature reviewed is from 2017 onwards. For more local literature from Africa as well as South Africa, SCOPUS, Web of Science, and SABINET African Journals databases were used. The same keywords as listed above were used, with the addition of 'South Africa' when seeking South African literature specifically. Again, search results were filtered for journal articles only. The same date range was applied. For physical ecologies in South Africa, the date had to be extended as far back as 2008 due to limited articles focusing on that area.

In terms of selection criteria, article titles and abstracts were screened for relevance based on the topic. Three primary criteria were applied during the screening process: (i) the articles had to address at least one of the domains of resilience, namely psychological, social, ecological/physical resilience; (ii) articles had to be focused specifically on children or at least include children (where children were defined as younger than 18 years); (iii) articles had to be published in English (or have a translated version available) to be included as the researcher's primary language is English. Due to the review being more of a narrative-type review, not all articles found were included. Rather, only those deemed by the research to be of most relevance to the topic were utilized. A brief reflection on the limitations of such a method are provided near the end of this article.

Selected articles were then read and categorized into either international, African or South Africa studies and within each context were further categorized into articles focusing predominantly on psychological resilience, social-based resilience, and ecological/physical resilience. Articles were then re-read, and primary findings extracted, collated, and written up, which forms the bulk of this article in the sections that follow.

Psychological ecologies of resilience

At an *international level* Rasmussen et al. (2019) conducted a systematic review and meta-analysis on the relationship between secure attachment style and resilience based on 33 reviewed studies primarily from global north countries. Their findings indicate there is a statistically significant and positive correlation between the quality of attachment and the presence of resilience properties. They further argue that stable attachment relationships are an important factor in fostering resilience, which can help buffer against adverse outcomes in adult life. They also note that stable attachment does not necessarily have to be between a child and a primary caregiver, but rather family members, or teachers, who can also provide the same kind of secure attachment, which they term as "earned security", that can help enable resilience in children (Rasmussen et al., 2019). Similarly, a study on young adults in the Unites States of America (USA) found more positive mother–child relationships in childhood predicted higher levels of resilience and higher levels of close attachment (Kennison and Spooner, 2020). Further, an interesting contribution of this study was that lower levels of negative father-child relationships predicted

higher levels of resilience. They reported that social support and social skills were particularly important when examining the relationships between parent–child relationships and attachment.

Similar links between attachment and resilience have been found in China too. A study based on 284 impoverished Chinese middle-school students examining mother–child attachment, resilience and psychological needs satisfaction found that mother–child attachment was positively related to psychological needs satisfaction. Positive needs satisfaction was then positively related to resilience, thus showing a mediated relationship (Wang et al., 2020). This finding is important as it suggests that despite economic hardship, fostering attachment between mother and child can help buffer against poor outcomes for the child. Quality of mother–child attachment was also positively associated with resilience; thus, the mother–child relationship is protective for child resilience (Wang et al., 2020). A study was conducted on children from low-income families in China based on the relationship between shyness and resilience on parent–child attachment and teacher-student relationship (Wang et al., 2022). It was reported that resilience moderated the relationship between shyness and teacher-student relationships. This relationship was stronger for children with low resilience as compared to their high-resilience counterparts (Wang et al., 2022). This suggests that a shy child may still be able to cope well in social situations if they are resilient, thus showing how resilience is a positive adaptive mechanism. Shyness was found to partially mediate parent–child attachment and teacher-student relationships, where shyness was negatively related to parent–child attachment. This suggests, in line with attachment theory, that more securely attached children exhibit less fear and anxiety in social situations (Wang et al., 2022).

A study based in Iran comparing working and non-working children on measures of stress-coping strategies, resilience and attachment styles indicated that, as expected, working children were more likely to have lost one or both parents, thus forcing them into work and consequently keeping them out of education (Pasyar et al., 2019). Working children reported lower levels of resilience compared to non-working children in this study, indicating that child labor hampers the development of resilience. These children often face less opportunities to develop resilience hence this finding is unsurprising (Pasyar et al., 2019). The physical environments working children find themselves in, such as impoverished streets and workshops, no doubt impact as risk factors and less the chance of developing resilience (Pasyar et al., 2019).

Children living in *Sub-Saharan Africa* (SSA) face numerous adversities, including communicable diseases, pervasive poverty, inequality, and armed conflict, among others (Theron, 2020). A narrative scoping review of research on the resilience of youth in 18 SSA countries observed the complex and multifarious nature of resilience in children and adolescents (Theron, 2020). The results indicated two primary findings: firstly, that personal support mechanisms and relational support mechanisms seemed to matter equally for young people; and secondly, the capacity to adjust positively to life challenges has a complex relationship with African ways-of-being and ways-of-doing. Interestingly, this review found no references to structural resources from school systems (Theron, 2020). Theron (2020) also suggests that, in-line with a collectivistic and relational worldview generally adopted by Africans (Bojuwoye and Moletsane-Kekae, 2018), that practitioners be appreciative of the complexities between relational and internal resources of young people. Theron (2020) also cautions against seeing resilience processes as universal, as some studies reviewed showed that individual agency was not consistently protective for young people.

A mental health intervention in Tanzania targeting youth living with HIV was conducted by Dow et al. (2018). The primary aim of the intervention was to increase the resilience of these young people. The study reported that the intervention was successful, with utility noted for the use of narrative in the intervention, which was associated with trauma reduction, normalizing experiences among peers and promoting interpersonal communication (Dow et al., 2018).

Zooming into *South Africa* (SA) a systematic review by van Breda and Theron (2018) was conducted on youth resilience studies of children between 2009 and 2017. They reported numerous adversities, which were primarily structural such as poverty and living in under-resourced communities. Other adversities also included being HIV positive, orphanhood, experience of violence, sexual abuse and being a refugee. In their content analysis of the articles reviewed, they reported that personal or relational resilience-enablers were most frequently reported, which included aspects such as teacher support, educational aspiration, financial well-being, and community support and safety. Although not a primary finding, adherence to African values such as *ubuntu* were also found as helpful in promoting resilience. Ubuntu refers to a collection of values and practices that African people have that makes them authentic individual human beings as part of a greater collective world (Mugumbate and Chereni, 2020) Affective support was found as the most reported factor specifically, encompassing feelings of being valued and a sense of belonging. This was primarily through friends, parents, caregivers, and teachers. The interaction of resilience-enablers was uncommon. van Breda and Theron (2018) recommend that practitioners understand the interaction of resilience-enablers and help make young people aware of additional resources available that would fit well with their current resources to bolster their resilience.

A multicounty study, of which South Africa was part, on trauma, resilience and mental health in migrant and non-migrant youth reported that South African adolescents had the highest mean number of traumatic events over the past year compared to the other five countries who took part in the study (Gatt et al., 2020). Interestingly, the study found that migrant adolescents had higher levels of resilience resources compared to non-migrants, despite migrants experiencing more traumatic events. Further, the impact of traumatic events on adolescent mental health was higher for non-migrants (Gatt et al., 2020). However, the authors argued that further research needs to be done to investigate how resilience can be promoted in youth irrespective of them being a migrant or not. A randomized clinical trial testing the efficacy of an intervention aimed at improving the resilience of young children with HIV-positive mothers in Tshwane, South Africa reported promising results (Eloff et al., 2014). The intervention group reported significant improvements in the domains of their children's externalizing behaviors, communication and daily living skills. Internalizing behaviors and socialization improvements were not significant, however. The results of the study also suggested that boys benefitted more than girls, but the authors argue that these differences likely have little practical relevance as both boys and girls still benefited from the intervention (Eloff et al., 2014).

Theron et al. (2022) performed a study on 21 South African and 31 Canadian youth who live in stressful environments. They reported that within the South African youths' psychological systems,

future-oriented agency and seeking and reciprocating help were key processes that emerged. In contrast, the Canadian youth reported self-regulation and self-efficacy in their psychological systems. For the South African youth, it was observed that their biological, psychological, and informal social resources interacted. As an example, able-bodied young men spoke about how physical strength (biological domain) mattered in the context of seeking out manual labor (economic domain), while young women pushed back against gender stereotypes (social domain) letting this drive their agency while simultaneously finding inspiration from role models in their community (intra and interpersonal domains). South African youth also expressed how striving for economic independence was associated with the benefits this would bring to psychological well-being (Theron et al., 2022). Additionally, Theron et al. (2022) reported that psychological and social system support emerged the most in their data, however they advocate for a multisystemic approach to understanding resilience in youth more holistically, in line with Ungar and Theron's multisystemic approach Ungar and Theron (2020).

Social ecologies of resilience

In an *international* study on practitioners' perspectives of caregivers' influence on the development of resilience in maltreated children it was found that practitioners believed that maintaining a stable home environment characterized by consistency, predictability and safety were essential in promoting resilience (Beaujolais et al., 2021). Specific behaviors that enable resilience, according to the practitioners, included prioritizing the needs of the child, believing disclosures made by the child and verbalizing belief in them. Furthermore, the participants advocated for a systems-based approach where family involvement in the child's life was important (Beaujolais et al., 2021), an approach supported by researchers too (Twum-Antwi et al., 2020). Unsurprisingly, the participants also indicated that a caregiver who is also a perpetrator of child maltreatment is a large barrier to the development of resilience in these children. An investigation of coping strategies used by undocumented Mexican youth in the USA argued that family-level coping strategies included parents providing informational support and emotional support (Kam et al., 2018). Informational support was utilized to protect the family unit, such as information on how to avoid deportation. Emotional support emerged as a means to safeguard the family's positive future by working together as a family unit to manage their lives, contribute to the household economics and support each other through shared stressors. This research also indicated that parents sometimes avoid discussing their undocumented status with their children to shield them from the potential stress this may cause (Kam et al., 2018).

Along similar lines of the ways that youths' social ecologies can promote resilience, Twum-Antwi et al. (2020) investigated the ways in which child and youth resilience can be strengthened by home and school environments. They argue that in the home factors such as parents' mental well-being, self-efficacy, parenting satisfaction and parental confidence are key factors in the outcome of parent–child relationships. Parental resilience, which consequently has an impact on child resilience, is fostered by the support of family, friends, and community resources. Similarly, within a school environment, teacher mental well-being, feelings of self-efficacy and job satisfaction are important in fostering the relationship between the teacher and the child (Twum-Antwi et al., 2020). Thus, the authors conclude that "educators and caregivers should not only make efforts to help children; they need to also help themselves" (Twum-Antwi et al., 2020, p. 84), thus demonstrating the systems-based approach that several researchers advocate for (van Breda and Theron, 2018; Theron, 2020; Ungar and Theron, 2020; Norris and Norris, 2021).

Glaser et al. (2022) conducted a study on the impact of a physical activity online intervention program during the COVID-19 pandemic on the resilience levels of 56 secondary school youth in Israel. They reported that pre-test resilience levels of the intervention group were lower than the control group but were equal to the control group post-test. The intervention improved participants' resilience, feelings of social support and decreased their levels of psychological distress (Glaser et al., 2022). Other studies have suggested similar advantages of physical activity for resilience development. Norris and Norris (2021) discuss the potential that being involved in sporting activities, and physical activity more broadly, can have on the physical and mental health of children where such benefits may be associated with resilience and thus can act as a buffer against adverse childhood experiences. Belcher et al. (2021) review article examined the links between physical activity and fitness and their impact on resilience in adolescents by examining changes in self-regulation. They argued that physical activity is linked to both structural and functional changes in both cognitive and emotional systems in the brain associated with mental health, thus suggesting that physical activity may be something that can help foster resilience and consequently mental health. Along similar biological lines, Niitsu et al. (2019) reviewed studies on the genetic influences of psychological resilience, reporting that six genes were associated with psychological resilience. However, they cautioned that such results are complex and involve intricate interactions of genes on resilience.

Sub-Saharan Africa faces numerous challenges, including high incidences of climate-related disasters (Bakshi et al., 2019), violent conflict (Allansson et al., 2017), high rates of gender-based violence (Muluneh et al., 2020), and high levels of trauma exposure (Ng et al., 2020). Thus, fostering socioecological resilience in these countries is essential to help buffer against the deleterious outcomes of the citizens in these countries, especially the youth. Faith (also referred to as spirituality and religion) can be an important aspect in the development of resilience in youth (Mhaka-Mutepfa and Maundeni, 2019). Mhaka-Mutepfa and Maundeni (2019) argue for more studies that assess the role of faith in resilience development longitudinally. They advocate for policy-level interventions where governments of SSA countries encourage religious bodies and traditional leaders to put steps in place to support the development of children. They note that aspects such as hope, love and forgiveness, key elements as part of faithful practice, may enhance children's well-being and resilience (Mhaka-Mutepfa and Maundeni, 2019). A study investigating the relationship between religion and resilience in youth was conducted by Gunnestad and Thwala (2011) in Zambia and Swaziland. Their analysis revealed that participants used religion as a resource to help handle life challenges. Religion provided connection with peers and role models, hope from their faith, and faith-based counseling to help cope with life difficulties (Gunnestad and Thwala, 2011).

While faith-based resilience has shown utility, other social interventions such as sport have also shown promise in SSA. Malete et al. (2022) examined the effects of a sports-based intervention program on the life skills and entrepreneurial development of youth

from Botswana, Ghana and Tanzania. Post-test scores suggested that the sports-based intervention significantly increased the life skills of the participants. This suggests, along the lines of other research studies in international contexts (White and Bennie, 2015; Fader et al., 2019), that sport is a valuable tool that can be used to intervene in the lives of young people with the objective of increasing their capacities to deal with life's challenges (Malete et al., 2022). A study based in northern Uganda explored the relationship between resilience, ideas of morality and community well-being through the lens of sport (Abonga and Brown, 2022). Young people in this study believed that sport was important to their development of resilience aiding in their acquisition of physical, material, and emotional resources, but it was noted that sporting programs need to be sustained. These researchers do acknowledge the challenges in resilience research, pointing out that sports program may reinforce inequalities such as dominance and patriarchy (Abonga and Brown, 2022). They argue that "programming for resilience, even culturally sensitive programming, will face this challenge if it fails to nuance the understanding of whose vision of resilience it is trying to promote and what elements of society it is trying to reinforce" (Abonga and Brown, 2022, p. 249). Craig et al. (2019) argue from a Malawian context that sport, as a form of therapeutic recreation for disabled youth, can be leveraged to empower young people and increase health outcomes. They discuss that in Malawi there is currently a diverse and dedicated group of sports leaders, however they do not have a central organizing network or have best practice guidelines to help them reach more young people (Craig et al., 2019).

Pswarayi (2020) conducted a qualitative study in Zimbabwe, using both focus groups and individual interviews, to examine the relationship between youth resilience and violence prevention. Despite the very trying socio-political climate in Zimbabwe characterized by pervasive poverty and high youth unemployment rates, the participants demonstrated how they utilized various processes of resilience, such as adapting to their environment and managing the pressures of their environment, in order to function effectively. Participants indicated how they were able to leverage their networks in order to link them to opportunities in the informal sector. Pswarayi (2020) notes that in Zimbabwe, there has emerged an alternative economy, the *kiya-kiya* economy which refers to making ends meet as a means of survival for young people, which is largely unregulated and informal and includes gambling spots. Pswarayi (2020) argues that the *kiya-kiya* economy reflects resilience of young people as it demonstrates their adaptive capacity to their context. However, sometimes this involves acts of criminality and violence to defend these informal economies.

A Kenyan study examining resilience and dialog with 120 participants, of which 30 were youth, reported that violent extremism in the country is a major problem resulting in human rights violations, discrimination, and socio-economic struggles (Sigsworth et al., 2020). The results of the study indicated that community resilience does exist as evidenced by the integration between differing identity groups and the coordination between people in helping solve shared problems. Participants noted that dialog between communities and law enforcement, and within communities themselves, is a barrier to peace at time. However, participants identified several areas where resilience can be fostered including maintaining cultural/religious identities, strengthening social cohesion, and including the voices the marginalized. It is the resilience of these participants that needs to be supported to continue the growth of dialog among people of differing creeds in order to work collaboratively toward a better and safer future in Kenya (Sigsworth et al., 2020).

For *South Africa*, Höltge et al. (2021) reported that the importance of getting an education was one of the top central resilience resources. Mampane and Bouwer (2011) argue that learners living in South African townships require resilience to overcome the various adversities they face. Their qualitative study on two township schools with learners reported that the influence the schools had on the learners varied according to their degree of resilience but was also influenced by the factors within the schools (Mampane and Bouwer, 2011). Factors such as providing life skills and clear rules of conduct were important to some of the participants. This suggests that schools as social ecologies have an important role to play in the development of youth resilience, where the influence of the school extends well beyond the provision of knowledge alone. The study also found that goal attainment seemed to have a strong relationship with resilience (Mampane and Bouwer, 2011).

A study conducted in the Free State with teachers from 20 schools used the Circle of Courage model for teachers to help build resilience (Reyneke, 2020). This model uses strengths-based techniques to encourage the development of resilience in learners by enhancing their sense of belonging, mastery, independence, and generosity. The study reported that the teacher participants needed to improve in all aspects of the model, particularly mastery, which was reported as the lowest scoring technique across the sample (Reyneke, 2020). Reyneke (2020) argued that increased use of the Circle of Courage framework and the development of the techniques the model outlines will help teachers improve their learners' resilience.

Bhana and Bachoo (2011) argue in their systematic review that family resilience is related to factors such as family cohesion, health belief systems, good parenting practices and social support. They argue that, in impoverished contexts specifically, community and social support plays a salient role in developing family resilience (Bhana and Bachoo, 2011). A quantitative investigation into the association of psychosocial vulnerability and family resilience with academic achievement in primary school learners in a township in Gauteng, South Africa, found that there was only partial support for the hypothesis that higher levels of family vulnerability are associated with lower academic achievement (Van Breda, 2022). Similarly, partial support was noted for learners with higher levels of individual or family resilience having higher academic achievement where this relationship only held for learners who had experienced more challenging life events. Although this study also offered a family-strengthening intervention, it did not improve academic achievement (Van Breda, 2022). These findings were surprising as it is generally believed that increased family strength positively impacts academic achievement and so schools and communities are encouraged to try strengthening resilience in families (Van Breda, 2022). It is for this reason that family-based interventions are designed, as in the case of Isaacs et al. (2018). Their contextually based family resilience program was designed for families in rural South African communities. They argue for the importance of the contexts that such programs are designed for and advocate for evidence-based research to be used in the designing of such interventions (Isaacs et al., 2018). Their intervention contained four modules including "about family", "closer together", "talking together", and "working together" – all elements that aim to increase connectedness, communication, and social and

economic resources. Further, they emphasized that although family-based resilience-promoting interventions may help improve family life, "it especially does not preclude the rights that all individuals have to be protected from structural adversity" (Isaacs et al., 2018, p. 633). Hence, government's role in assisting its citizens must always necessarily be an active one.

Physical ecologies

In an *international* cross-country study on the interaction between social and ecological resources on adolescent resilience Höltge et al. (2021) found that all 14 countries reviewed had different resilience networks, pointing toward how unique environmental contexts influence resilience. While psychological and social determinates of resilience are important, the physical environment in which youth find themselves embedded may also impact on development of resilience processes. Ungar (2017, p. 1280) succinctly notes that research often acknowledges "the link between neurons and neighborhoods, or cells and communities" through person-environment interactions. Thus, it is equally important to understand the physical ecologies that may impact youth resilience (Ungar and Theron, 2020). Studies have shown that neighborhoods with higher social cohesion can act as a preventative factor against maltreatment in children (Abdullah et al., 2020), more socially cohesive neighborhoods have been associated with buffering against the deleterious effects of stressful life events helping keep depression/anxiety, suicidal ideation and aggressive conduct levels lower in youth (Kingsbury et al., 2020), and higher levels of neighborhood support have been shown to help reduce aggression and delinquency in youth exposed to violence (Jain and Cohen, 2013). A qualitative study in the US exploring the environmental health perspectives of urban youth reported that the theme of environmental health resilience factors was constructed in their study based on their focus group data, with subthemes of safety, trust, engagement, leadership, and representation emerging (Bogar et al., 2018). They argue that safety and trust are environmental health resilience factors that enable youth to navigate their local spatial contexts, where youth develop "cognitive risk maps" of which areas are safer (such as community gardens) and which are not (such as areas frequented by discriminatory law enforcement officers) (Bogar et al., 2018). They further note how race or power differentials, such as differing socioeconomic statuses, play their role as structural drivers of which spaces are more accessible and safer for youth, which consequently has an impact on their environmental health resilience (Bogar et al., 2018).

There has been a growing interest in the relationship between humans and their natural environment and the consequences of this relationship for health (Seymour, 2016). Studies have shown that for children spending more time in nature is related to health development, well-being, and positive attitudes toward the environment (Gill, 2014). Similar findings have been noted for adults where Wood et al. (2017) reported that the total area of public green spaces was associated with increased mental well-being, with a dose–response relationship being noted. Thus, the potential positive impact of the natural environment on mental health needs to be taken seriously. Hatala et al. (2020) explored the meaning-making practices of Indigenous Canadian youth using photovoice regarding their perceptions of the environment and its influence on their health and resilience. Their study reported that participants constructed nature as a calming place, using metaphors such as those of the seasons as linked to cyclical phase of life, and further inscribed a sense of hope into their natural environment. Participants linked their experiences of the natural environment to their coping with stress, fear, anger and general difficulties in their daily lives. This study contributes to the growing body of knowledge that has begun to acknowledge how nature or land plays a role in supporting youth resilience and well-being (Hatala et al., 2020).

In an *African* study it was found that physical space, and the safety of that space, influences the ways in which people adapt to their environments and it has an impact on how the built environment is shaped (Watson, 2009). Watson (2009) argues that urban planning has traditionally excluded the poor. One need not look further than urban spatial planning in apartheid South Africa for examples of this, where to this day cities across the country still echo constructed divisions of the past (Maharaj, 2020). Oosthuizen and Burnett (2019) investigated how residents in an impoverished township in Johannesburg perceived their use of spaces and how they view these spaces in terms of safety. Their sample consisted primarily of learners from local schools. From their findings, they generated four typologies of space based on safety and activity: unsafe activity supportive, safe activity supportive, unsafe activity unsupportive and safe activity unsupportive. The authors argue that such community mapping is useful so that schools and NGOs can identify safe spaces where they can implement sporting and physical activity programs for youth to increase participation (Oosthuizen and Burnett, 2019). The development of such spaces may aid in providing networks of activities that can promote youth resilience (Ungar and Theron, 2020).

Studies have also provided evidence of the impact one's physical neighborhood can have on mental health and resilience. A South African study assessing the relationship between social capital and youth mental health utilizing family social capital and neighborhood social capital as its primary variables outlined that family social capital, as measured by household income, decreased the odds of depression, while higher perceptions of crime in the participants' neighborhoods increased the chances of depression (Somefun and Fotso, 2020). These findings suggest that although increased family social capital is associated with decreased mental illness, it does not necessarily promote increased mental well-being (Somefun and Fotso, 2020). A study based in Reservoir Hills in Durban, South Africa, a historically Indian middle-income area, examined community member perceptions of safety regarding urban open spaces (Perry et al., 2008). Parks and open spaces in the neighborhood were viewed as unsafe by participants, who felt fearful of these spaces due to potential criminal activities, regardless of whether the spaces were well-maintained or not (Perry et al., 2008). This is in contrast to research more globally which generally indicates more green space is associated with lower incidences of illegal activity in urban environments (Shepley et al., 2019). These contrasts echo Ungar and Theron's (2020) arguments that resilience has to be understood contextually and locally produced, hence no two ecological systems are the same.

Implications for child resilience interventions

The preceding discussion provided an understanding of the social, psychological, and physical ecologies of resilience which

I consider essential to be positioned within a socioecological perspective. This perspective is feasible because it provides an understanding of resilience on four levels, namely individual, relationships, community, and society (Dahlberg and Krug, 2006). The interaction between children, their relationships with others, community exposure, and societal factors have an integrative and holistic impact on their levels of resilience (Edberg et al., 2017). As such, resilience must be viewed as a dynamic and interactive ecology. At the individual level children's biological and personal history (age, family income, and education) contribute to their resilience. At the relationship level children's interaction with family and community members as well as peers at school can contribute to their levels of resilience. At the community level, schools, local neighborhoods, and religious organizations could also influence resilience in children. At the societal level several factors can impact the resilience of children, for example, social, and cultural beliefs and practices and policies that promote economic and social inequalities among people. The four levels are not mutually exclusive but are interdependent in promoting or reducing resilience in children. Resilience does not result from a single level but from multiple systemic influences that impact all four levels. Taking these levels into consideration I now point out the implications for child resilience interventions within a South African context.

At the *individual level* the psychological ecology of resilience is crucial. Virtually all literature notes that attachments between children and parents, irrespective of different contexts, seems to be an important determinant of child resilience, especially in reducing anxiety and fear in children (Wang et al., 2022). However, in a Western and Eurocentric context prominence may be given to the psychological constructs of self-regulation and self-efficacy to promote individual agency of children but in an African context interaction with dispositional characteristics and social resources appear to support the psychological empowerment of children (Theron et al., 2022). Being valued by others and having a sense of belonging is important for child resilience within an African context. A wisdom for child psychological resilience from Africa is attachments with parents/caregivers are important but attachments with others (peers, teachers, and community members) are just as valuable, for example, many orphans in South Africa succeed in life by adopting positive role models that make them believe in a better future and being open to help from others. Essentially parents, family members, peers and teachers play a pivotal role in positively contributing to psychological ecologies of resilience in children. A loving, caring, stable, and mentally healthy parent/caregiver could psychologically empower children. In an African context this can even be a family or community member, a teacher, or a religious leader since family is viewed in a broader context. As such, we see an interaction with psychological and social ecologies that can contribute to child resilience. At an individual level physical ecologies are also important for child resilience, for example, literature cited earlier have shown that social cohesion in local communities is linked to reduced levels of stress, depression, anxiety, and suicide attempts (Abdullah et al., 2020; Kingsbury et al., 2020). Exposure to natural environments is known to have a positive impact on mental health of children (Somefun and Fotso, 2020). However, in South Africa children are not encouraged to go to parks and gardens due to safety and security issues. Physical activities and sport also have a positive effect on psychological wellbeing (Oosthuizen and Burnett, 2019) so these should be included in school programs.

At the *relationships level* the literature reviewed indicates that positive, healthy, and close relationships contribute to child resilience. The relationships children develop with their parents/caregivers, family members and peers are crucial in them becoming resilient. Resilience-based strategies at this level should focus on positive parenting and family relationship skills, parent–child communication skills, mentoring, and peer education programs. In an African context children depend on both individual and collective agency to be resilient even though the latter may be more dominant. One of the wisdoms in an African context is that kinship ties are strong, so children are cared for by other family members if their parents are deceased. However, economic hardships are eroding kinship ties (Pillay, 2020).

At the *community level* characteristics of schools and local neighborhood settings play a vital role in child resilience. Safe schools and neighborhoods are most likely to build psychological, social, and physical resilience in children (Nitschke et al., 2021). Community and religious-based organizations can be instrumental in building resilience in children. Even in poor communities if there are facilities for children to learn, play and interact with others the probability of building resilience in them is likely to be greater. Schools are valuable institutions in the community because children spend a considerable amount of time at schools. This means that school management teams, school governing structures and teachers are strategically placed to address resilience-based programs as part of the school curriculum. The literature review pointed out the value of faith-based education and religious beliefs and practices in promoting child resilience. Despite poverty, crime, orphanhood, and dysfunctional families children still had positive future aspirations because of the faith they had in God (Asante, 2019). The wisdom from this is that faith-based education should be included in the school curriculum and places of worship.

The last level focuses on broad *societal factor*s that contribute to child resilience. These factors are usually linked to social and cultural beliefs and practices that either diminish or support child resilience. For example, child labor and child marriages in some African contexts erode resilience in children. The blurred boundaries between cultural child rearing practices and corporal punishment are another example of reducing child resilience. At this level it is vital to determine how health, education, social and economic policies contribute to child resilience. Such policies in the apartheid South Africa maintained social and economic inequalities that often led to deleterious consequences for children and families negating child resilience. Promoting child resilience at the societal level should be directed at addressing the social and economic inequalities that exist in society, for example, the distribution of social grants for the unemployed, single parent and child-headed households, and free health and education facilities for children from poor homes and communities.

Limitations

Limitations of this article primarily center around the type of review employed. While narrative reviews are useful to gather information about a subject field (Kastner et al., 2012), they lack the same rigor as other types of reviews such as systematic reviews. In this study, not all search results were screened as this was practically challenging due to the number of results produced, specifically for international literature. The author acknowledges this limitation. Further, the timeframe, especially for South African literature, was not

as rigorously applied and had to be extended to prior to 2017 in order to include studies on all three domains of resilience examined. The study would also have benefitted from the inclusion of another researcher who could have screened articles as well so that the selection process was more rigorous. However, despite these limitations, the author is of the view that such narrative-type reviews hold value in reviewing a particular field of inquiry to understand the current trends and state of the research in said field.

Conclusion

A comparison between child resilience within an African and Western context was not an aim of this paper but the literature review provided some common as well as very distinct differences in relation to child resilience within an African and Western context that should be noted. Common elements relate to secure parent–child attachments, safe, and nurturing environments. However, in an African context, interventions to promote child resilience places more emphasis on the external role of caregivers, families, and local communities while in a Western context the main focus is on the internal focus of control. This means from an African perspective child resilience will depend more on the people and society they interact with. Child resilience interventions must take psychological, social, and physical ecologies into consideration but more importantly interventions should be embedded within individuals, relationships, communities, and society. Interventions should include not just parents and family but also teachers, religious leaders, and community-based organizations. Faith-based education, culture, and future aspirations are crucial elements for African child resilience programs.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Pre-pandemic family resources and child self-regulation in children's internalizing problems during COVID-19: a multi-level social-ecological framework for emotional resilience

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Introduction: Children's psychological adjustment to adverse events can be determined by multiple risk and resilience factors. This study explored multi-level protective factors against children's internalizing problems and investigated the mechanism regarding how diverse environmental and child-level resources influence children's mental health in the context of COVID-19.

Methods: Our participants included a nationally representative sample of 2,619 young children (48.3% girls) and their primary caregivers (95.1% mothers) in Singapore. They were a subset of the participants in the Singapore Longitudinal Early Development Study (SG LEADS). Data were collected over two waves—before the outbreak of the COVID-19 pandemic (Wave 1) when these children aged 3 to 6, and during the second year of the pandemic (Wave 2). Primary caregivers completed measures of verbal cognitive ability, self-control, economic stress, and positive and negative parental control in Wave 1. Children's self-regulation was assessed by the Delay of Gratification task in Wave 1, and their internalizing problems were rated by their primary caregivers in both waves. Other pre-pandemic family and community characteristics were collected as covariates. Structural equation modeling was performed.

Results: Pre-pandemic parental resources (i.e., verbal cognitive ability, self-control, and low economic stress) predicted children's fewer internalizing problems during the pandemic and less aggravation of internalizing problems from before to during the pandemic, through more positive parental control (i.e., limit setting) and less negative parental control (i.e., harsh discipline). Moreover, children's self-regulation during early childhood was predicted by their primary caregivers' verbal cognitive ability and self-control, as well as positive parental control. Early childhood self-regulation further alleviated the aggravation of internalizing problems over time. Among the covariates, parental education, family income, parental psychological well-being, living with both parents, having a live-in domestic helper, and neighborhood quality also longitudinally predicted fewer child internalizing problems.

Discussion: Our findings underscore the importance of nurturing children's emotional resilience under adverse and uncertain circumstances by boosting protective factors in their social-ecological system, including community-, family-, parent-, and child-level resources.

KEYWORDS

internalizing problems, economic stress, verbal cognitive ability, self-control, parental control, family resources, community resources, delay of gratification

1. Introduction

The global outbreak of the coronavirus disease (COVID-19) brought about unprecedented changes to individuals and families worldwide. Families with children have to adapt to the disruptions in their daily lives and routines in response to school closures, home-based learning, lack of social interactions, reduced outdoor activities, stay-at-home orders or quarantines, parents' changes of work schedule, and their struggle between work and childcare. Children have been one of the most vulnerable populations to the negative impacts of COVID-19 (United Nations, 2020). They are generally more sensitive to these changes, which may impede their sense of predictability and security and subsequently impact their mental health (Wang et al., 2020). A large body of research has shown that children manifested an increase in externalizing symptoms (e.g., inattention, irritability, and hyperactivity) and internalizing symptoms (e.g., worry, fear, depression, and anxiety) during the pandemic across the globe (Crescentini et al., 2020; Cusinato et al., 2020; Duan et al., 2020; Francisco et al., 2020; Jiao et al., 2020; Bignardi et al., 2021; Di Giorgio et al., 2021; Khoury et al., 2021).

While environmental stressors may increase children's risk of mental health problems, a wide array of protective factors can empower children to maintain or improve their well-being under uncertain and adverse circumstances. The process of using strengths, competencies, and resources to overcome contextual risks and maintain or enhance one's well-being is broadly defined as resilience (Garmezy et al., 1984; Masten et al., 1990; Bonanno, 2004; Masten, 2014). The social-ecological framework of resilience emphasizes the crucial roles of individuals' interactions with the environment (Ungar et al., 2013). Resilience can be promoted with protective factors related to individual differences, family contexts, and community characteristics (Bonanno, 2004). In other words, internal resources (such as personality traits, regulatory strategies, and developmental levels) and external resources (such as social support and interpersonal resources) should be utilized to foster children's resilience. In the context of COVID-19, researchers have highlighted the importance of integrating multiple protective factors into studying resilience and longitudinal psychological outcomes (Chen and Bonanno, 2020). However, the complex mechanism regarding how diverse external and internal resources may work together to enhance children's resilience and psychological adjustment to adverse events remains less well understood.

Therefore, it is essential to examine the pathways linking multi-level resources (e.g., community-, family-, parent-, and child-level resources) to children's mental health during the COVID-19 pandemic. We aim to address this question in a socioeconomically and ethnically diverse sample of young children in Singapore—a high-income, highly educated, modern, multicultural, and multiracial country in South-East Asia. The nation experienced a prolonged period of COVID-19 lockdown with restrictions in 2020. The number of community cases grew dramatically in 2021. Survey data collected during pre-pandemic, pre-lockdown, and lockdown in Singapore has shown significant impacts of the COVID-19 pandemic on family income, childcare arrangements, family dynamics, and mental health (Yang et al., 2023). Nonetheless, a systematic investigation of children's mental health and resilience in the context of COVID-19 in Singapore has been limited thus far compared to other countries.

According to a school-based survey on 2,139 children in Singapore (Woo et al., 2007), Singaporean children have higher rates of internalizing problems than externalizing problems, while Western children have higher rates of externalizing problems than internalizing problems in the non-COVID-19 context. While externalizing problems signify behaviors that are harmful and disruptive to others (such as aggression, oppositionality, and hyperactivity), internalizing problems are characterized by intropunitive emotions and moods, such as sadness, withdrawal, fear, and worry (Zahn-Waxler et al., 2000). A complex interplay between internal and environmental processes influences the emergence and changes in internalizing problems over time during childhood and adolescence (Zahn-Waxler et al., 2000). Hence, it is essential to explore environmental and individual-level protective factors against Singaporean children's internalizing symptoms (e.g., anxiety, depression, and withdrawal) during the COVID-19 pandemic. This investigation can provide insight into how to promote Singaporean children's emotional resilience under stressful and uncertain circumstances.

Family is the most proximal environment that influences early childhood development. According to the family stress theory, economic stress has negative impacts on children's adjustment through disrupted parent–child interactions (Conger et al., 1994; Yeung et al., 2002; Masarik and Conger, 2017). Parents who experience higher economic stress tend to have lower psychological and relational resources. These parents may use less nurturing but more punitive parenting to discipline their children, which intensifies their children's internalizing problems and externalizing problems (e.g., LaFrenière and Dumas, 1992; Linver et al., 2002; Yeung et al., 2002; Conger and Donnellan, 2007). Parents' economic and psychological resources are crucial for children's social-emotional development by enhancing functional parent–child interactions.

Furthermore, the lack of control in children's early environment diminishes their sense of control and increases their psychological vulnerability to anxiety and depression (Chorpita and Barlow, 1998). It is noteworthy that different types of parental control can have dramatically different impacts on children's social-emotional development. Harsh disciplinary strategies (such as criticism and aggressive or coercive behaviors) can be categorized as negative parental control, referred to as using a power-assertive method to excessively control children's behaviors without granting age-appropriate autonomy. Negative parental control has been consistently associated with children's poorer self-regulation (Blair and Raver, 2012) and more internalizing symptoms, particularly anxiety (Hudson and Rapee, 2002; Bayer et al., 2006). In contrast, positive parental control, with low to moderate power assertion (such

as setting rules with guidance, instructions, and discussions with children), can have positive implications for children's developmental outcomes, such as self-regulation (see Karreman et al., 2006, for a meta-analysis).

Self-regulation conceptualizes integrated processes to attain goals and manage significant life events and transitions (McClelland et al., 2010). Self-regulation has been a critical child-level protective factor in mitigating the impacts of contextual risks on children's internalizing and externalizing problems (Lengua and Long, 2002; Lengua, 2003; Eiden et al., 2007; Lengua et al., 2008; Flouri et al., 2014). As an important aspect of self-regulation, Delay of Gratification (DoG) refers to the proclivity to forgo immediate and small gratification in order to attain more valuable but delayed rewards (Mischel, 1974; Mischel et al., 1989). Early DoG predicts children's positive development in many domains, including more advanced social-emotional functioning, fewer behavior problems, greater cognitive functions, and school readiness across Western contexts (Mischel et al., 1989; Duckworth et al., 2013) and Asian contexts (Chen and Yeung, 2023a,b). Hence, nurturing children's self-regulation during early childhood may improve their competence to adjust to stressful or challenging situations later in life.

During early childhood, self-regulation develops rapidly and adaptively based on early experiences (Eisenberg et al., 2005; Blair and Raver, 2012). According to the theory of self-regulation development, children progress from reactive, externally regulated, or co-regulated behavior to more advanced, proactive, or internally regulated behavior during the early years (Kopp, 1982; Diamond, 2002). The development of self-regulation, moving from external control (imposed by parents or caregivers) to internally controlling one's emotional and behavioral impulses, is part of the socialization process in response to parent–child interactions (Calkins et al., 1998; Kochanska et al., 2000, 2001; Eisenberg et al., 2005). The meta-analysis conducted by Karreman et al. (2006) revealed that positive parental control (e.g., limit setting, guidance, and instructional behaviors) effectively fosters children's self-regulation. In contrast, using harsh disciplinary strategies to overcontrol young children's behaviors undermines children's internalization of external controls and reduces their attempt to regulate their emotions and behaviors proactively, and consequently impedes their development of self-regulation (Silverman and Ragusa, 1992; Kochanska and Aksan, 1995; Calkins et al., 1998; Kochanska and Knaack, 2003).

Very few studies have incorporated the family stress theory and the model of self-regulation development in a single comprehensive framework to investigate children's emotional and behavioral development. Prior research has demonstrated that contextual risk factors (such as economic disadvantages or adverse life events) lead to dysfunctional parenting behaviors (e.g., punitive or inconsistent discipline, lower responsiveness, and less support for autonomy), which further result in children's poorer self-regulation (Lengua, 2009; Hardaway et al., 2012). Furthermore, children's compromised self-regulation mediates the impact of economic disadvantages on their social-emotional functioning (see Raver, 2004 for a review). In particular, the mediating role of self-regulation in the longitudinal relations of family functioning and parenting behaviors to children's externalizing problems has been well-documented in the literature (Eisenberg et al., 2005; Valiente et al., 2006; Hardaway et al., 2012). Nevertheless, there has been relatively less direct evidence for the mediating role of self-regulation in the longitudinal associations between family processes (including parenting) and children's internalizing problems. The examination of the mediating pathways linking family resources, positive and negative parental control, and child self-regulation to children's internalizing problems is thus needed.

Another limitation in the literature is that very few studies have systematically investigated the influences of parental resources in various forms (e.g., cognitive, psychological, and economic resources) on parenting strategies and children's adjustment. Family functioning and parenting usually derive from parental characteristics, personality, resources, and competence (Chen and Luster, 2002). Parental self-control (the ability to regulate one's cognition, emotions, and voluntary behaviors in accordance with internal goals) and verbal cognitive ability may play crucial roles in nurturing children's self-regulation and emotional development. Parents higher on self-control in their daily lives (e.g., breaking bad habits, resisting temptations, and regulating emotions) may tend to set clearer rules for their children's activities. These parents may also be able to inhibit the tendency to use emotionally charged or harsh disciplinary strategies to discipline children, which are harmful to children's internalization of the rules. With more advanced verbal cognitive ability, parents can use better reasoning and richer vocabulary to guide, teach, and encourage their children to regulate their behaviors to meet changing situational demands. Teaching-based control, expressivity, guidance, and appropriate instructions can facilitate children to regulate their behaviors and emotions proactively (Olson et al., 1990; Calkins et al., 1998; Kochanska et al., 2000; Putnam et al., 2002; Eiden et al., 2007; Lengua et al., 2007). It is reasonable to expect that verbal cognitive ability and self-control can provide parents with cognitive and psychological resources to engage in functional parental control, nurture children's self-regulation, and enhance their emotional resilience.

Taken together, the overarching aim of the present study was twofold: (1) to identify multi-level protective factors against young children's internalizing problems and (2) to investigate the mechanism regarding how primary caregivers' cognitive, psychological, and economic resources may influence young children's internalizing problems through parental control and child self-regulation. Other family and community characteristics, such as parental education, family income, parental psychological well-being, living arrangements, and neighborhood quality, were included as covariates in this study. To increase the generalizability of the findings, the current investigation uses a large and nationally representative sample of young children in Singapore as an example. By addressing these aims in the context of COVID-19, the findings can advance the understanding of Asian children's emotional resilience from the social-ecological perspective.

Figure 1 displays the proposed mediating pathways linking multi-level resources to child internalizing problems. We posit that primary caregivers' cognitive, psychological, and economic resources would predict children's fewer internalizing problems during the COVID-19 pandemic by enhancing functional parental control and improving children's self-regulation. Specifically, we proposed the following hypotheses:

> *Hypothesis 1a*: Parental resources (e.g., verbal cognitive ability, self-control, and less economic stress) would predict fewer child internalizing problems.

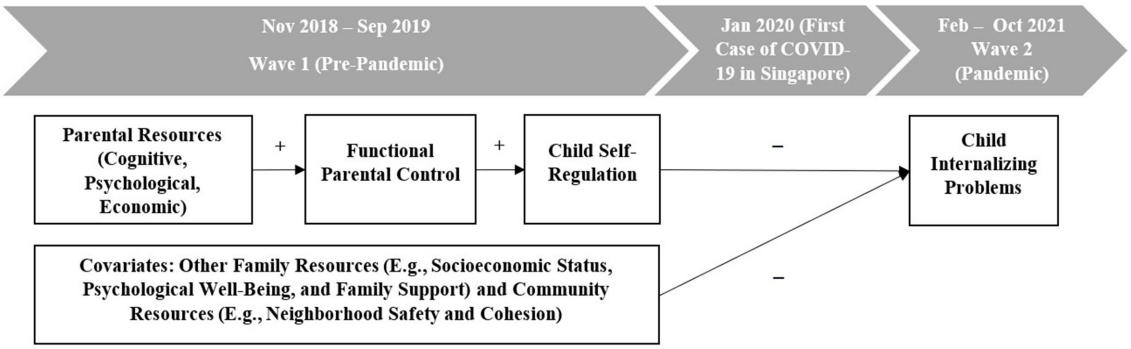

FIGURE 1
Proposed pathways linking multi-level resources to child internalizing problems.

Hypothesis 1b: Functional parental control (e.g., more positive parental control and less negative parental control) would predict fewer child internalizing problems.

Hypothesis 1c: Child self-regulation (e.g., DoG) would predict fewer child internalizing problems.

Hypothesis 1d: Other family and community resources (as covariates in this study), such as parental education, family income, parental psychological well-being, living with two parents, having a live-in helper, living with grandparents, and neighborhood quality, would predict fewer child internalizing problems.

Hypothesis 2a: Parental control would mediate the longitudinal relations of parental resources to children's internalizing problems.

Hypothesis 2b: Child self-regulation would mediate the longitudinal relations of parental resources and parental control to children's internalizing problems.

Hypothesis 3a: Parental control would mediate the effect of parental resources on changes in child internalizing problems over time.

Hypothesis 3ba: Child self-regulation would mediate the effects of parental resources and parental control on changes in child internalizing problems over time.

2. Methods

2.1. Participants and procedure

Our participants included a nationally representative sample of 2,619 young children in Singapore (48.3% girls) and their primary caregivers (95.1% were mothers, 3.7% were fathers, and 1.2% were others). They were a subset of the participants from the Singapore Longitudinal Early Development Study (SG LEADS; Yeung et al., 2020, 2022), carried out by the authors' research team. A total of 5,005 children under age 7 took part in the first wave of SG LEADS. Only children aged 3 years and above ($n = 2{,}973$ in Wave 1) were eligible for the measures of self-regulation and internalizing problems. Finally, 2,619 children attended child assessments in both waves and became the final sample in our current research. Child-level normalized sampling weight was applied to all analyses to account for the initial selection probability. Among these children, 66.8% were ethnic Chinese, 15.8% were Malays, 12.3% were Indians, and 5.1% were from other ethnic backgrounds.

Data were collected over two waves during home visits. The first wave of data collection was conducted from November 2018 to September 2019, about 4 to 14 months before the outbreak of the COVID-19 pandemic. Children aged between 36 and 83 months ($M_{wave1age} = 58.9$, $SD_{wave1age} = 14.1$) in Wave 1. Children completed the DoG task, which measured self-regulation. Primary caregivers responded to measures on family and community characteristics, verbal cognitive ability, self-control, economic stress, parenting strategies, and child internalizing problems. The second wave of data collection was conducted during the second year of the pandemic, from February to October 2021. The average interval between the two waves was 24.9 months ($SD = 3.21$, $range = 13$–38). These children became 55 to 118 months old ($M_{wave2age} = 83.8$, $SD_{wave2age} = 14.3$). Primary caregivers rated child internalizing problems again in Wave 2. This study was approved by the Institutional Review Board (IRB) at the National University of Singapore (Approval code: S-17-326).

2.2. Measures

2.2.1. Parental verbal cognitive ability

We selected eight items from the Passage Comprehension Test in the Woodcock-Johnson IV Tests of Achievement (WJ IV ACH; McGrew et al., 2014; Schrank et al., 2014) to measure primary caregivers' verbal cognitive ability. Correct response scored 1, and no response or error scored 0. Scores of all items were summed to indicate verbal cognitive ability (Cronbach's alpha was 0.83 in the

current sample), with a higher score indicating more advanced verbal cognitive ability.

2.2.2. Parental self-control

Parental self-control was measured by 10 items selected and modified from the Brief Self-Control Scale (BSCS; Tangney et al., 2004). Three items were positively keyed (e.g., "I refuse things that are bad for me"), and seven items were negatively keyed (e.g., "Sometimes I cannot stop myself from doing something, even if I know it is wrong" and "Pleasure and fun sometimes keep me from getting work done"). Primary caregivers reported the extent to which each statement described them on a 5-point scale ranging from 1 (not at all like me) to 5 (very much like me). We reversed the scoring of all negatively keyed items and then averaged the scores of all 10 items to indicate self-control (Cronbach's alpha was 0.77 in the current sample). A higher score indicates greater self-control.

2.2.3. Economic stress

One single item, "At the end of the month, do you (and your family) usually end up with some money left over, just enough to make ends meet, or not enough money to make ends meet?" was used to measure family economic stress (1 = "some money leftover," 2 = "just enough to make ends meet / just enough to cover all expenses," and 3 = "not enough to make ends meet /not enough to cover expenses"). A higher score indicates a higher level of economic stress.

2.2.4. Positive parental control (limit setting)

Primary caregivers reported how often they set limits on their children's activities in the past month, including setting limits on "how late your child(ren) can stay up at night," "how much candy, sweets, or other snacks your child(ren) can have," "which other children your child(ren) spend(s) time with," "set a time when your child(ren) do(es) homework," and "how your child(ren) spend(s) time after school or daycare," as well as "discuss these rules with your child(ren)." The 5-point scale ranges from 1 (never) to 5 (very often). Scores of all six items were averaged to indicate positive parental control (Cronbach's $\alpha = 0.79$), with a higher score indicating more positive parental control.

2.2.5. Negative parental control (harsh discipline)

Primary caregivers reported how often they disciplined their children in the past month, using high power-assertiveness methods, such as physical punishment (e.g., "spanking" and "grounding"), scolding (e.g., "had to scold or threaten your child for misbehavior"), taking away privileges (e.g., "taking away privileges"), and time-out (e.g., "sending the child to his/her room"). The 5-point scale ranges from 1 (not in the past month) to 5 (every day). The average score of all six items was computed to indicate negative parental control (Cronbach's $\alpha = 0.60$), with a higher score indicating more negative parental control.

2.2.6. Child DoG

We modified Prencipe and Zelazo's (2005) standard DoG choice task to measure children's DoG. Nine test trials were created by crossing three types of reward (i.e., balloons, stickers, and erasers) and three types of choice (i.e., 1 now vs. 2 later, 1 now vs. 4 later, and 1 now vs. 6 later). Each child was presented with the actual rewards for both "now" or "later" options (e.g., 1 balloon for the "now" option and 4 balloons for the "later" option) and asked to choose between the two options. During each test trial, the "now" option scored 0, and the child would receive the small reward immediately. The "later" option scored 1, and the larger reward would be put into an envelope, set aside, and received by the child after the game, which took about 10 min. Scores of all nine test trials were summed to indicate the child's DoG, with a higher score indicating a greater ability to delay gratification. The choice paradigm has shown good reliability, convergent validity, and predictive validity in a large and nationally representative sample of Singaporean young children (Chen & Yeung, 2023a).

2.2.7. Child internalizing problems

Children's internalizing problems (such as withdrawal, anxiety, and depression) were measured by 13 items selected from the Behavior Problems Index (BPI) developed by Peterson and Zill (1986) and based on earlier work by Achenbach and Edelbrock (1981). The items used in this study were identified by the factor analysis conducted in the current sample (see Appendix A in the Supplementary materials). The internalizing problems subscale possessed good internal reliability in the current sample (Cronbach's alphas were 0.83 and 0.85 in Wave 1 and Wave 2, respectively). The primary caregiver reported the child's behavior on a 3-point scale (1 = "often true," 2 = "sometimes," and 3 = "not true"). We recoded the responses as 0 = "not true," 1 = "sometimes," and 2 = "often true." Scores of all relevant items were summed to indicate internalizing problems, with a higher score indicating more internalizing problems.

2.2.8. Controls

2.2.8.1. Child demographics

Child gender (dummy coded as 1 = girl, 0 = boy), ethnicity (three dummy variables were created, namely Malays, Indians, and Others, with Chinese as the reference group), and child age (in months) in both waves were collected.

2.2.8.2. Parental education

Primary caregivers reported their educational attainment. Parental education is classified into three categories, namely Low Education (no formal schooling, primary school, or secondary school), Medium Education (post-secondary non-tertiary general or vocational education, polytechnic diploma, professional qualification, or other diploma), and High Education (Bachelor's, postgraduate diploma, or Master's and Doctorate or equivalent).

2.2.8.3. Annual household income per capita

Primary caregivers reported their household income in the past 12 months. Annual household income per capita was calculated by dividing the total annual household income by the number of family members residing in the household. Annual household income per capita was log-transformed for analysis in this study.

2.2.8.4. Parental psychological distress

The 6-item Kessler Psychological Distress Scale (K6) was deployed by Kessler et al. (2002) to assess non-specific psychological distress. Primary caregivers reported the frequency of feeling "nervous," "hopeless," "restless or fidgety," "that everything was an effort," "so sad that nothing could cheer you up,"

and "worthless" in the past 4 weeks, on a 5-point scale where 1 indicates "all of the time" and 5 indicates "none of the time." We recoded the response as 0 = "none of the time," 1 = "a little of the time," 2 = "some of the time," 3 = "most of the time," and 4 = "all of the time." Scores of all items were summed to indicate the level of non-specific psychological distress (Cronbach's $\alpha = 0.86$ in the current sample), with a higher score indicating a higher level of psychological distress.

2.2.8.5. Single parenthood

Based on the primary caregiver's marital status, a dummy variable was created to indicate single parenthood (1 = single-parent, 0 = two-parent). Responses of "never married," "divorced," and "widowed" were recoded as "1," and "currently married" was recoded as "0."

2.2.8.6. Living arrangements

We collected information about all the members living in the household. Two dummy variables were created, namely having a live-in domestic helper (1 = at least one live-in domestic helper, 0 = no live-in domestic helpers) and living with grandparents (1 = living with at least one grandparent, 0 = living without grandparents).

2.2.8.7. Neighborhood quality

Primary caregivers rated the quality of the neighborhood (considered 15 to 20 min walking distance from the house) on six items. The first item was a general rating of the neighborhood as a place to raise children on a 5-point scale ranging from 1 = "poor" to 5 = "excellent." The second item concerned the safety of walking around alone in the neighborhood after dark on a 4-point scale ranging from 1 = "extremely dangerous" to 4 = "completely safe." The third to sixth items measured the characteristics of the neighbors, including friendliness, taking care of each other, trust on each other, and familiarity with each other, on a 7-point scale, with a higher score indicating a higher level of each characteristic. The z-score was computed for each item. The z-scores of all six items were averaged to indicate the perceived quality of the neighborhood (Cronbach's $\alpha = 0.82$), with a higher score indicating better quality of the neighborhood.

2.3. Analytics strategy

Descriptive statistics and bivariate correlations among all variables were calculated. A series of Structural Equation Models (SEMs) was performed on Mplus 7.31 (Muthén and Muthén, 1998) to (1) examine the longitudinal relations of diverse pre-pandemic environmental and child-level resources to children's internalizing problems during the COVID-19 pandemic, (2) establish the mediating pathways linking pre-pandemic parental resources, parental control, and child self-regulation to child internalizing problems during the pandemic, when controlling for other pre-pandemic family and community characteristics, and (3) test the pathways to changes in child internalizing problems over time, when controlling for pre-pandemic child internalizing problems. Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), and Standardized Root Mean Square Residual (SRMR) were presented to indicate model fit. Normalized child-level sampling weight was applied to all analyses.

3. Results

3.1. Preliminary analyses: descriptive statistics, bivariate correlations, and changes in children's internalizing problems from wave 1 to wave 2

Descriptive statistics of all main variables and bivariate correlations between Wave 1 variables and Wave 2 child internalizing problems are presented in Table 1. The paired sample *T*-test was performed to compare child internalizing problems measured in two waves. Based on primary caregivers' ratings, children displayed more internalizing problems during the COVID-19 pandemic than before the outbreak of the pandemic, $t(2813) = 13.7$, $p < 0.001$.

3.2. SEM: pathways linking pre-pandemic parental resources, parental control, and child self-regulation to child internalizing problems during the pandemic

In the first model, we examined the direct effect of pre-pandemic parental resources on children's internalizing problems during the COVID-19 pandemic. Primary caregivers' verbal cognitive ability and self-control before the pandemic predicted fewer child internalizing problems during the pandemic ($\beta = -0.057$, $SE_\beta = 0.031$, $p = 0.062$, 95% CI[−0.11, −0.007], and $\beta = -0.13$, $SE_\beta = 0.043$, $p = 0.002$, 95% CI[−0.21, −0.062], respectively). However, pre-pandemic economic stress did not directly affect children's internalizing problems during the pandemic ($\beta = 0.065$, $SE_\beta = 0.058$, $p = 0.26$, 95% CI[−0.030, 0.16]).

A set of covariates (i.e., child age, gender, ethnicity, parental education, parental psychological distress, annual household income per capita, single parenthood, having a live-in domestic helper, living with grandparents, and neighborhood quality) were entered into the second model. The model exhibited good model fit (RMSEA = 0.039, 90% CI [0.031, 0.048], CFI = 0.99, TLI = 0.98, SRMR = 0.024). The direct effect of primary caregivers' verbal cognitive ability on child internalizing problems remained significant ($\beta = -0.11$, $SE_\beta = 0.021$, $p < 0.001$, 95% CI[−0.14, −0.072]), but the direct effect of primary caregivers' self-control on child internalizing problems became nonsignificant ($\beta = -0.015$, $SE_\beta = 0.016$, $p = 0.34$, 95% CI[−0.042, 0.011]). The direct effect of pre-pandemic economic stress on child internalizing problems during the pandemic remained nonsignificant ($\beta = 0.012$, $SE_\beta = 0.016$, $p = 0.45$, 95% CI[−0.014, 0.038]).

In the third model, positive and negative parental control and child DoG were entered as the mediators. The model obtained adequate model fit (RMSEA = 0.050, 90% CI [0.043, 0.058], CFI = 0.97, TLI = 0.84, SRMR = 0.022). As illustrated in Figure 2, primary caregivers' verbal cognitive ability directly predicted fewer child internalizing problems, and this relationship was also mediated by positive parental control (indirect effect: $\beta = -0.007$, $SE_\beta = 0.003$, $p = 0.019$). Primary caregivers' self-control indirectly predicted fewer child internalizing problems through less negative parental control

TABLE 1 Descriptive statistics of all main variables and bivariate correlations of wave 1 (W1) variables with wave 2 (W2) child internalizing problems.

	r	*M*	*SD*	*Range*	*N*
W2 Child Internalizing Problems	–	2.97	3.33	0–24	2,619
W1 Parental Verbal Cognitive Ability	−0.15***	3.97	2.39	0–8	2,619
W1 Parental Self-Control	−0.063**	4.00	0.55	1.6–5	2,619
W1 Economic Stress	0.11***	1.43	0.62	1–3	2,619
W1 Positive Parental Control	−0.071***	3.30	0.74	1–5	2,458
W1 Negative Parental Control	0.065***	1.72	0.54	1–4.2	2,619
W1 Child Delay of Gratification	−0.019	5.19	3.62	0–9	2,604
Controls					
W1 Child Internalizing Problems	0.24***	1.94	3.19	0–26	2,601
W1 Child Age (in months)	0.080***	58.9	14.1	36–83	2,619
W2 Child Age (in months)	0.097***	83.8	14.3	55–118	2,619
Child Gender					
Girl (%)	0.002	48.3	–	–	2,619
Boy (%)	−0.002	51.7	–	–	2,619
Child Ethnicity					
Chinese (%)	0.041*	66.8	–	–	2,619
Malays (%)	0.039*	15.8	–	–	2,619
Indians (%)	−0.049**	12.3	–	–	2,619
Others (%)	−0.078***	5.1	–	–	2,619
Parental Education					
High (%)	−0.13***	48.1	–	–	2,619
Medium (%)	0.059**	29.5	–	–	2,619
Low (%)	0.088***	22.4	–	–	2,619
W1 Annual Household Income Per Capita (Log)	−0.11***	4.17	0.62	0–6.02	2,582
W1 Parental Psychological Distress	0.11***	3.03	3.67	0–22	2,619
W1 Single Parenthood (%)	0.062**	3.97	–	–	2,619
W1 Living with Grandparent(s) (%)	0.078***	23.1	–	–	2,619
W1 Having a Live-In Domestic Helper(s) (%)	−0.068***	34.0	–	–	2,619
W1 Neighborhood Quality (Z-Score)	−0.054**	0.000	0.72	−3.85–1.91	2,619

***$p < 0.001$; **$p < 0.01$; *$p < 0.01$.

(indirect effect: $\beta = -0.014$, $SE_\beta = 0.004$, $p = 0.001$). Economic stress had an indirect effect on child internalizing problems through more negative parental control (indirect effect: $\beta = 0.018$, $SE_\beta = 0.006$, $p = 0.002$) and less positive parental control (indirect effect: $\beta = 0.009$, $SE_\beta = 0.004$, $p = 0.018$). Among the covariates, parental psychological distress, single parenthood, and living with grandparents predicted more child internalizing problems during the pandemic. In contrast, parental education, annual household income per capita, having a live-in domestic helper, and neighborhood quality predicted fewer child internalizing problems during the pandemic. All factors accounted for 69.7% of the variation in children's internalizing problems during COVID-19.

The final model controlled for pre-pandemic child internalizing problems to examine the pathways to changes in child internalizing problems from before to during the pandemic. The data fit the model well (RMSEA = 0.055, 90% CI[0.049, 0.061], CFI = 0.95, TLI = 0.78, SRMR = 0.038). As shown in Figure 3, primary caregivers' verbal cognitive ability directly and negatively predicted children's increases in internalizing problems from before to during the pandemic, and this relation was also mediated by positive parental control (indirect effect: $\beta = -0.008$, $SE_\beta = 0.003$, $p = 0.010$). Primary caregivers' self-control indirectly and negatively predicted children's aggravation of internalizing problems over time through less negative parental control (indirect effect: $\beta = -0.012$, $SE_\beta = 0.004$, $p = 0.003$). Economic stress had an indirect effect on children's increases in internalizing problems over time through more negative parental control (indirect effect: $\beta = 0.015$, $SE_\beta = 0.005$, $p = 0.003$) and less positive parental control (indirect effect: $\beta = 0.010$, $SE_\beta = 0.004$, $p = 0.010$). Moreover, children's DoG during early childhood was predicted by concurrently measured primary caregivers' self-control, verbal cognitive ability, and positive parental control. Early childhood DoG further reduced children's aggravation of internalizing problems over time. Among the covariates, single parenthood and living with grandparents predicted a larger increase in child internalizing problems from before to during

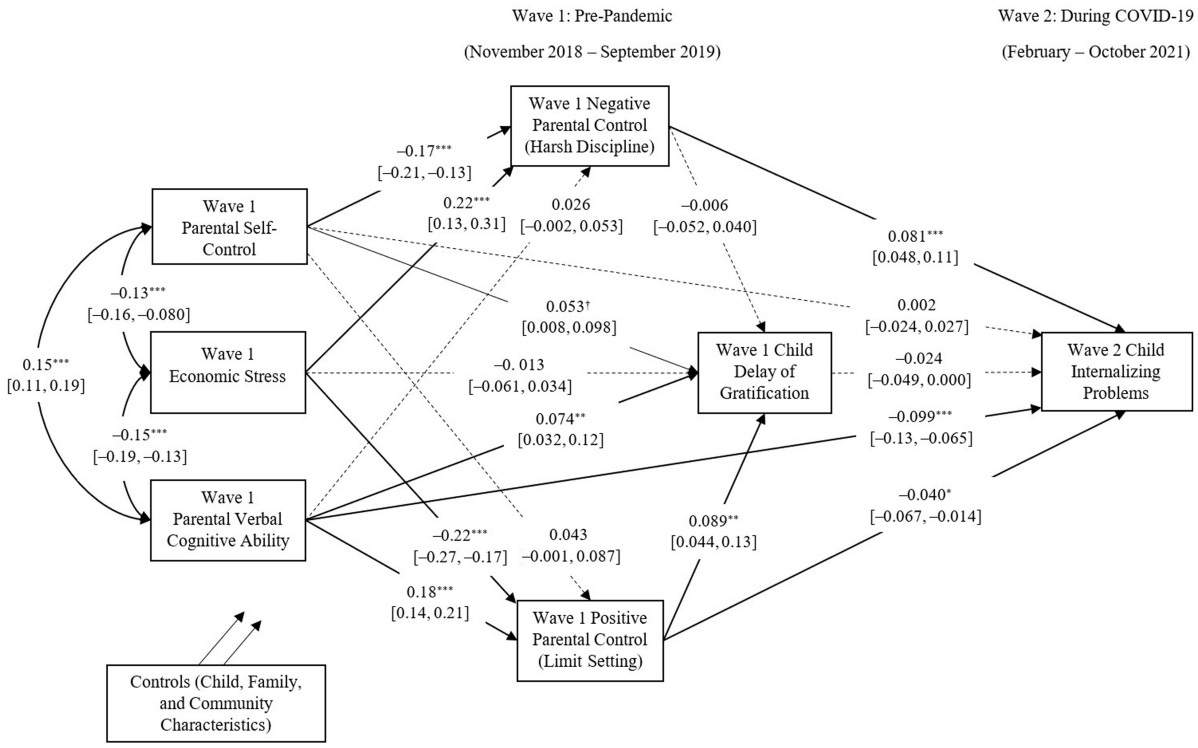

FIGURE 2
Pre-pandemic parental resources predict children's internalizing problems during the COVID-19 pandemic through parental control. Note: Covariates included child age, gender, ethnicity, parental education, annual household income per capita, parental psychological distress, single parenthood, living with grandparent(s), having a live-in domestic helper(s), and neighborhood quality. Bold lines indicate significant paths, normal lines indicate marginally significant paths, and dotted lines indicate nonsignificant paths. 95% confidence intervals are presented in square brackets. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, and †$p < 0.10$.

the pandemic. In contrast, parental education, annual household income per capita, and having a live-in domestic helper predicted less aggravation of child internalizing problems over time. All variables explained 70.7% of the variation in Wave 2 internalizing problems ($ps < 0.001$).

Table 2 details the standardized coefficients of the effects of all main variables in Wave 1 on child internalizing problems in Wave 2 and changes in child internalizing problems from Wave 1 to Wave 2. The indirect effects of parental resources through parental control and child self-regulation are presented in Table 3.

4. Discussion

To our best knowledge, this was the first longitudinal study that used a large, nationally representative, and socioeconomically and ethnically diverse sample of young children in Asia to investigate the complex mechanism regarding how diverse environmental and child-level resources influence children's internalizing symptoms. Based on the data gathered in Singapore, the current study examined (a) the longitudinal relations of multi-level resources to children's internalizing problems and (b) the mediating pathways from parental resources to child internalizing problems through parental control and child self-regulation. The present work has addressed these questions in the context of COVID-19, and the findings can provide insight into the influences of social-ecological systems on Asian children's emotional resilience under adverse and uncertain circumstances.

We discovered that primary caregivers' verbal cognitive ability, self-control, and low economic stress were critical parental resources that predicted fewer child internalizing problems and greater emotional resilience directly or indirectly through parental control and child self-regulation. In particular, primary caregivers' cognitive, psychological, and economic resources were related to more positive parental control (e.g., limit setting) and less negative parental control (e.g., harsh discipline), which predicted children's fewer internalizing problems during the pandemic, and alleviated their increases in internalizing problems over time. Positive parental control also predicted children's greater self-regulation during early childhood, which further diminished an exacerbation of internalizing problems. In addition, we examined other pre-pandemic family and community characteristics as covariates in this study. We discovered that parental psychological well-being (e.g., low psychological distress), family socioeconomic status (e.g., parental education and family income), living with two parents, living without grandparents, having a live-in domestic helper, and neighborhood quality also predicted children's fewer internalizing problems during the pandemic. In particular, family socioeconomic status and living arrangements further predicted children's changes in internalizing problems over time.

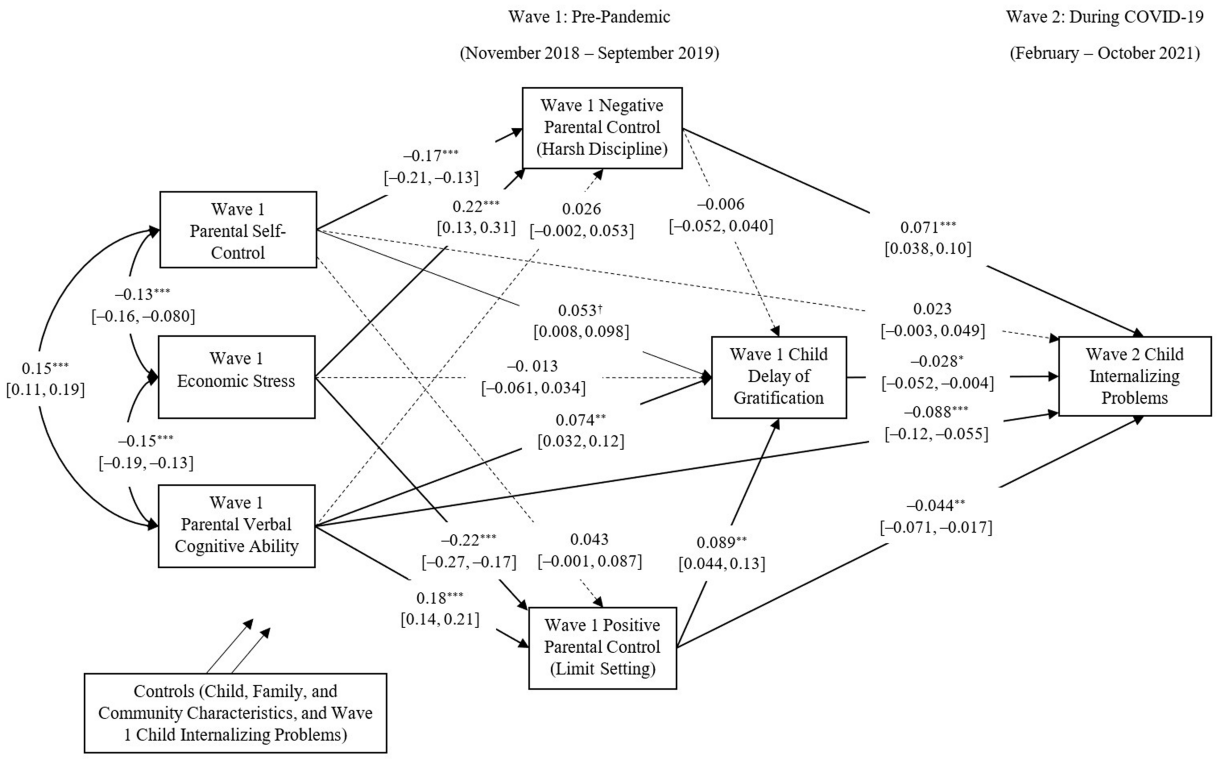

FIGURE 3
Pre-pandemic parental resources predict changes in child internalizing problems from Wave 1 (pre-pandemic) to Wave 2 (during the COVID-19 pandemic) through parental control and child self-regulation. Note: Covariates included pre-pandemic internalizing problems, child age, gender, ethnicity, parental education, annual household income per capita, parental psychological distress, single parenthood, living with grandparent(s), having a live-in domestic helper(s), and neighborhood quality. Bold lines indicate significant paths, normal lines indicate marginally significant paths, and dotted lines indicate nonsignificant paths. 95% confidence intervals are presented in square brackets. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, and †$p < 0.10$.

The first unique feature of this study is the systematic investigation of the longitudinal effects of multi-level resources on children's outcomes in the same model. First, our research has filled the gaps in understanding the influences of parental resources in various forms on early childhood development. While previous studies largely focused on parental psychological distress and economic stress, we have taken into account parental cognitive and self-regulatory abilities. We discovered that cognitive verbal ability, self-control, and low economic stress could provide parents with cognitive, psychological, and economic resources to nurture children's emotional well-being and resilience. Second, while positive parental control was less examined in prior research compared to punitive approaches and parental warmth, we have included different types of parental control in the same model. Our findings demonstrated that positive and negative parental control could exert considerably different effects on children's emotional development. While negative parental control (e.g., harsh discipline) intensifies children's internalizing problems, positive parental control (e.g., limit setting) can reduce children's internalizing problems and enhance their emotional resilience. Third, we highlight the interplay between environmental and child-level factors. Our data shows that early childhood self-regulation serves as a crucial child-level resource that can be shaped by early environments and then empowers children to counteract the impacts of adversities on their mental health. Finally, we have considered the influences of other pre-pandemic family and community characteristics on early childhood development. As expected, primary caregivers' psychological distress can have a long-term impact on children's emotional symptoms; family socioeconomic status (including parental education and family income) provides the family with resources to foster children's emotional well-being and resilience under adversity; children growing up in single-parent families have a higher risk of mental health issues and may experience a more significant increase in internalizing symptoms over time. Living arrangements can also play a part in early emotional development. For example, we found that having a live-in domestic helper can predict fewer child internalizing problems and less aggravation of internalizing problems over time, possibly due to the alleviated daily hassles in the family. Contrary to our hypothesis, living with grandparents can be longitudinally related to more child internalizing problems during the pandemic and a large increase in internalizing problems over time, possibly due to disagreements in parenting or intergenerational conflicts. At the child level, cultural backgrounds were also found to be associated with children's emotional symptoms during the pandemic. Indian children had fewer internalizing problems than their Chinese and Malay counterparts, based on parent reports. This result may be explained by Indian families' socialization goals and cultural values that view childhood as a carefree period (Rao et al., 2003). At the community level, neighborhood quality (e.g., safety and cohesion) can predict

TABLE 2 Effects of pre-pandemic variables in wave 1 (W1) on child internalizing problems during COVID-19 in wave 2 (W2) and changes in child internalizing problems from W1 to W2.

	Model 3 (Child Internalizing Problems in W2)			Model 4 (Changes in Child Internalizing Problems from W1 to W2)		
	β	SE_β	*95% CI*	*β*	SE_β	*95% CI*
Predictors						
W1 Parental Verbal Cognitive Ability	−0.099***	0.021	[−0.13, −0.065]	−0.088***	0.020	[−0.12, −0.055]
W1 Parental Self-Control	0.002	0.016	[−0.024, 0.027]	0.023	0.016	[−0.003, 0.049]
W1 Economic Stress	−0.015	0.016	[−0.041, 0.011]	−0.019	0.016	[−0.045, 0.006]
Mediators						
W1 Positive Parental Control	−0.040*	0.016	[−0.067, −0.014]	−0.044**	0.016	[−0.071, −0.017]
W1 Negative Parental Control	0.081***	0.020	[0.048, 0.11]	0.071***	0.020	[0.038, 0.10]
W1 Child Delay of Gratification	−0.024	0.015	[−0.049, <0.001]	−0.028*	0.015	[−0.052, −0.004]
Controls						
W1 Child Internalizing Problems	–	–	–	0.13***	0.033	[0.072, 0.18]
W1 Child Age (in months)	−0.007	0.067	[−0.12, 0.11]	0.037	0.067	[−0.073, 0.15]
W2 Child Age (in months)	0.072	0.076	[−0.052, 0.20]	0.019	0.073	[−0.10, 0.14]
Child Gender: Girl (Ref: Boy)	0.007	0.013	[−0.015, 0.028]	0.008	0.013	[−0.013, 0.030]
Child Ethnicity (Ref: Chinese)						
Malays	0.020	0.014	[−0.002, 0.042]	0.019	0.013	[−0.003, 0.040]
Indians	−0.033*	0.015	[−0.057, −0.008]	−0.037**	0.014	[−0.060, −0.014]
Others	−0.039*	0.016	[−0.064, −0.013]	−0.095**	0.035	[−0.15, −0.038]
W1 Parental Education (Ref: Medium)						
High	−0.099**	0.028	[−0.15, −0.052]	−0.10**	0.030	[−0.15, −0.053]
Low	0.84***	0.059	[0.74, 0.93]	0.83***	0.058	[0.73, 0.92]
W1 Annual Household Income Per Capita (Log)	−0.058**	0.019	[−0.088, −0.027]	−0.058**	0.019	[−0.088, −0.027]
W1 Parental Psychological Distress	0.035*	0.016	[0.009, 0.061]	0.024	0.015	[−0.001, 0.049]
W1 Single Parenthood	0.032†	0.017	[0.004, 0.059]	0.032†	0.016	[0.005, 0.059]
W1 Living with Grandparent(s)	0.044**	0.016	[0.018, 0.070]	0.047**	0.016	[0.021, 0.072]
W1 Having a Live-In Domestic Helper(s)	−0.028†	0.014	[−0.051, −0.004]	−0.027†	0.014	[−0.050, −0.004]
W1 Neighborhood Quality (Z-Score)	−0.022†	0.013	[−0.044, <0.001]	−0.020	0.014	[−0.043, 0.002]

***$p < 0.001$; **$p < 0.01$; *$p < 0.01$; †$p < 0.10$.

children's fewer internalizing problems during the pandemic. Indeed, resilience outcomes are often observed in communities with higher social cohesion (Heid et al., 2016). Together, our findings highlight the roles of community-, family-, parent-, and child-level resources in shaping children's positive development.

More importantly, the present research revealed the mechanism through which multi-level resources work together to promote children's emotional well-being and resilience. Guided by the family stress theory and the model of self-regulation development, we established the mediating pathways linking three types of parental resources (e.g., cognitive, psychological, and economic resources) to children's internalizing problems through two types of parental control (e.g., positive and negative control) and child self-regulation. The pathways remained significant after controlling for other family and community characteristics.

Among the three forms of parental resources, self-control and verbal cognitive ability were positively correlated, and they were both associated with lower economic stress. Indeed, self-control has been related to cognitive functions (McClelland et al., 2007; Shamosh and Gray, 2008) and verbal ability (Cole et al., 2003; Roben et al., 2013) since early childhood. Cognitive function and attention may support individuals' ability to regulate their cognition, emotions, and behaviors consciously. Self-control also supports individuals to perform better in cognitive tasks. Moreover, self-control and verbal cognitive ability provide parents with knowledge and skills to manage financial matters in the family, communicate needs and thoughts, and plan for their expenditures in a future-oriented way. Thus, parents with greater self-control and verbal cognitive ability are less likely to experience economic stress. Parents who experience a lower level of stress may also practice self-control more frequently in their daily lives (e.g., inhibiting temptation, breaking bad habits, and regulating emotions) and perform better in cognitive tasks.

Furthermore, primary caregivers' cognitive, psychological, and economic resources influence their parenting strategies. Our findings suggest that primary caregivers with stronger self-control and less economic stress are less likely to engage in negative parental control

(e.g., harsh discipline or punishment). Primary caregivers with more advanced verbal cognitive ability and less economic stress tend to deploy positive parental control, such as setting limits on their children's activities accompanied by discussions, guidance, and encouragement. The relationship between economic stress and negative parental control was in line with the family stress model, which posits that the experience of stress leads to more punitive and less nurturing parenting (Yeung et al., 2002; Conger and Donnellan, 2007). The relationship between economic stress and positive parental control (e.g., limit setting) was less well documented in the literature compared to harsh discipline and parental warmth. Our finding adds to the literature by revealing the differential roles of negative and positive parental control in the association between economic stress and child outcomes. Also, the relations of parents' cognitive and self-regulatory abilities to parenting strategies were less explored in prior research. Our findings further advance the literature by illustrating that verbal cognitive ability and self-control can provide parents with knowledge and skills to employ more functional strategies to facilitate their children to regulate behaviors and emotions. Self-control enables parents to regulate their emotions effectively and inhibit the tendency to use emotionally charged strategies, such as spanking, grounding, and scolding. Verbal cognitive ability enables parents to use more advanced reasoning and rich vocabulary to guide their children to follow the rules and internalize the rules.

Parental resources and parenting behaviors create the most proximal environment for children's early development of self-regulation. Corresponding to the model of self-regulation development (Kopp, 1982), our findings indicate that young children's self-regulation can be nurtured by primary caregivers' self-control, verbal cognitive ability, and positive parental control. Parents with strong self-control to resist temptation, inhibit unfavorable behaviors, and perform socially desirable behaviors can act as good role models when their children learn and practice regulating behaviors and emotions. Previous studies showed that parental expressivity, including nonverbal and verbal expressions of emotions, predicted children's physiological and behavioral regulation (Liew et al., 2011). We argued that primary caregivers with better verbal cognitive skills could use more effective expressivity, instructions, and encouragement to guide their children to regulate their emotions and behaviors internally. Furthermore, positive parental control (derived from parents' verbal cognitive ability and low economic stress) can further facilitate young children's development of self-regulation. The relationship between positive parental control and child self-regulation aligned with previous meta-analysis results (Karreman et al., 2006). Using directiveness with low to moderate power assertion (e.g., setting rules, discussing the rules with children, and enforcing the rules) can facilitate children to internalize caregivers' external control and progress to internal control (Calkins et al., 1998; Belsky et al., 2000; Kochanska et al., 2000, 2001). In contrast, excessively controlling children's behaviors through harsh discipline without granting them sufficient age-appropriate autonomy results in children's negative emotions (e.g., helplessness and lack of control) and poorer emotional regulation skills, which further lead to their internalizing symptoms, such as anxiety and depression (Hudson and Rapee, 2002; Bayer et al., 2006).

Finally, self-regulation serves as an essential child-level resource that empowers children to adjust to adversities and maintain or improve their mental health under adversity (Lengua and Long, 2002; Lengua, 2003; Eiden et al., 2007; Lengua et al., 2008; Flouri et al., 2014). Our study shows that when children have greater self-regulation (e.g., delayed gratification), they are less likely to intensify internalizing problems under stressful or challenging situations. The ability to delay gratification is an important aspect of self-regulation, reflecting one's capacity to inhibit dominant responses and perform subdominant responses. Nurturing self-regulation during the early years can provide children with a good foundation to regulate their emotions and behaviors and to counteract the negative impacts of significant life events on their emotional well-being.

The current research has several theoretical implications. First, our findings fill the gaps in understanding the complex mechanisms regarding how various parental resources can protect children from internalizing symptoms through functional parental control and child self-regulation. The present work has incorporated the family stress model (Conger et al., 1994; Conger and Donnellan, 2007; Yeung et al., 2002) and the model of self-regulation development (Kopp, 1982) in a single comprehensive framework. More importantly, we extended these well-established theories from the Western, Educated, Industrialized, Rich, and Democratic (WEIRD) context to Asian cultures and from the non-COVID-19 context to the COVID-19 context. Second, this study has advanced the literature by illustrating how children's emotional well-being and resilience can be nurtured by multi-level resources in children's social-ecological systems, including community-, family-, parent-, and child-level resources. These findings have added to the social-ecological framework of resilience, which emphasizes individuals' interactions with the environment (Bonanno, 2004; Ungar et al., 2013). In addition, based on the data collected from a large, national probability, socioeconomically and ethnically diverse sample of children in a multicultural Asian country, our findings have excellent generalizability. They can also shed light on social-emotional development and resilience among children from other countries with similar characteristics.

The present study also has significant practical implications. Our research calls for attention to nurturing children's emotional resilience under stressful and uncertain circumstances by activating multi-level resources in their social-ecological systems. Consistent with previous studies on the interaction between child-level competence and environmental resources in the Asian context (e.g., Chen and Yang, 2022), our study underscores the interplay between external and internal resources. Resilience-based intervention programs have been effective in reducing internalizing symptoms and promoting psychological well-being among children and adolescents (see Dray et al., 2017 for a systematic review). It is necessary to design and implement appropriate interventions during the post-pandemic period to boost individual-level and environmental protective factors to foster children's resilience. Moreover, our findings affirm the critical roles of family processes in early childhood development in different domains, including self-regulation, emotional well-being, and resilience. We recommend family-based interventions to enhance parents' cognitive, psychological, and socioeconomic strengths and improve functional parent–child interactions so as to promote family resilience. These practices can further facilitate

TABLE 3 Indirect effects of pre-pandemic parental resources in wave 1 (W1) on child internalizing problems during the COVID-19 pandemic in wave 2 (W2) and changes in child internalizing problems from W1 to W2.

Mediating Pathways	β	SE_β	95% CI
Pathways to Child Internalizing Problems in W2 (Model 3)			
Total indirect effect of Verbal Cognitive Ability	−0.005	0.003	[−0.011, <0.001]
Parental Verbal Cognitive Ability → Positive Parental Control → (Fewer) Child Internalizing Problems	−0.007*	0.003	[−0.013, −0.003]
Total indirect effect of Self-Control	−0.016**	0.004	[−0.023, −0.008]
Parental Self-Control → (Less) Negative Parental Control → (Fewer) Child Internalizing Problems	−0.014**	0.004	[−0.018, −0.005]
Total indirect effect of Economic Stress	0.027***	0.007	[0.015, 0.039]
Economic Stress → (Less) Positive Parental Control → Child Internalizing Problems	0.009*	0.004	[0.004, 0.016]
Economic Stress → Negative Parental Control → Child Internalizing Problems	0.018**	0.006	[0.007, 0.024]
Pathways to Changes in Child Internalizing Problems from W1 to W2 (Model 4)			
Total indirect effect of Verbal Cognitive Ability	−0.009*	0.004	[−0.014, −0.003]
Parental Verbal Cognitive Ability → Positive Parental Control → Changes in Child Internalizing Problems	−0.008*	0.003	[−0.013, −0.003]
Total indirect effect of Self-Control	−0.016**	0.005	[−0.023, −0.008]
Parental Self-Control → (Less) Negative Parental Control → Changes in Child Internalizing Problems	−0.012**	0.004	[−0.019, −0.006]
Total indirect effect of Economic Stress	0.026***	0.007	[0.015, 0.037]
Economic Stress → (Less) Positive Parental Control → Changes in Child Internalizing Problems	0.010*	0.004	[0.003, 0.016]
Economic Stress → Negative Control → Changes in Child Internalizing Problems	0.015**	0.005	[0.007, 0.024]
Economic Stress → (Less) Positive Parental Control → (Lower) DoG → Changes in Child Internalizing Problems	0.001†	<0.001	[<0.001, 0.001]

Covariates included child age, gender, ethnicity, parental education, annual household income per capita, parental psychological distress, single parenthood, living with grandparents, having a live-in domestic helper(s), neighborhood quality, and pre-pandemic child internalizing problems.

***$p < 0.001$; **$p < 0.01$; *$p < 0.01$; †$p < 0.10$.

children to build a good foundation for positive adjustments to potential adversities or major life events. Last but not least, this study informs policymaking and highlights the importance of building human capital (such as health, knowledge, and skills) and community resources (such as neighborhood safety, social support, and cohesion) to empower families and individuals to improve their well-being and resilience during future times of adversity.

The interpretation of current findings must take into account the limitations of this study. First, most of the variables were collected by onsite self-report or informant-report measures, which may compromise the accuracy of the data due to social desirability (Mortel and Thea, 2008). In this study, only parental verbal cognitive ability and child self-regulation were assessed by behavioral measures, while other information was reported by primary caregivers. Future studies will benefit from deploying observations, behavioral measurements, and multi-informant reports to assess parents' self-control, parent–child interactions, and children's emotional symptoms. Relatedly, our findings primarily relied on maternal reports because 95% of the primary caregivers were mothers. The information about father–child interactions and father-reported family processes was minimal. Future studies may investigate the roles of fathers' parenting in children's social-emotional development in order to get a more comprehensive understanding of children's emotional resilience from the social-ecological perspective. Lastly, the protective factors in this study were identified during early childhood, which is a critical stage for child development in many domains. The literature has documented some unique protective and risk factors (e.g., parent–child conflicts, peer relationships, social connections, media exposure, and concerns for governments' restrictions) for adolescents' mental health during the COVID-19 pandemic (Magson et al., 2021). Thus, when children enter adolescence, other resources in the social-ecological system should be incorporated to foster their emotional well-being and resilience.

5. Conclusion

The present research has identified an array of pre-pandemic protective factors against children's internalizing problems during the COVID-19 pandemic. Parental resources (e.g., cognitive, psychological, and socioeconomic resources), functional parent–child interactions (e.g., more positive control and less negative control), child-level resources (e.g., self-regulation), family characteristics (e.g., living arrangements), and community characteristics (e.g., safety and cohesion) contribute to children's mental health. Moreover, this study has helped illustrate the complex mechanisms regarding how parental resources can protect young children from declines in mental health under adversity through parental control and child self-regulation. It is critical to develop and implement resilience-based and family-based interventions to activate multi-level resources in young children's social-ecological systems, so as to promote their resilience and psychological adjustment to future stressful or challenging circumstances.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by the Institutional Review Board (IRB) at the National University of Singapore. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

LC and W-JY contributed to the conception and design of the study. W-JY acquired the funding and resources for the study and supervised the project. LC organized the dataset, performed the statistical analysis, and wrote the first draft of the manuscript. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1203524/full#supplementary-material

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Social ecological resources for youths living with HIV in western Uganda

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Introduction: The adversities faced by youths living with HIV (YLWH) are manifold, resulting not only from the health impact but also from society's response to HIV and the people living with it. This study sought to explore these youths' perceptions and representations of what promotes resilience.

Methods: Photovoice methodology was chosen to elicit first-person accounts that are grounded in lived experience and experiential knowledge. Eleven young people, boys and girls aged 14–21 living in western Uganda, participated in seven group sessions aimed at imagining, producing and discussing visual stories about what fosters resilience in the face of HIV-related adversity. The visual stories were subjected to inductive content analysis by the participants, and then thematically analyzed and interpreted by the researchers using the theoretical framework of social-ecological resilience.

Results: We found that participants experience well-being amidst HIV-related adversity through managing tensions in material resources, sense of identity, power and control in their lives, cultural adherence, relationships, sense of cohesion and social justice.

Discussion: The findings add to the body of knowledge on youth resilience in Sub-Saharan Africa by documenting multisystemic resources for YLWH in Ugandan communities. The findings further show that resources are highly incidental and situational, neither widely available nor structurally embedded in society. The study therefore informs the global HIV/AIDS agenda to spur ecologies of resilience around YLWH.

KEYWORDS

HIV, youth, resilience, photovoice, empowerment, resources

1. Introduction

The Human Immunodeficiency Virus (HIV) and its associated disease, the Acquired Immunodeficiency Syndrome (AIDS), are profoundly impacting the lives of many youths globally, who tend to be predominantly situated on the African continent. Research has started to document the manifold challenges of living with HIV for youths in Sub-Saharan Africa (Lowenthal et al., 2014; Vreeman et al., 2017; Woollett et al., 2017; Kimera et al., 2020a). This has contributed to an enhanced understanding of HIV not only as a health issue, but also as a condition that affects the interrelated life domains of those afflicted with it as well as the families, communities and other social-ecological systems that surround them.

Our previous research in Uganda documented that adversities and challenges reported by youths living with HIV (YLWH) are not only due to the impact of HIV on their health, but are

typically compounded through interactions with these surrounding systems (Kimera et al., 2020a,b). Although social attitudes and public discourses have evolved considerably since the emergence of the pandemic in the 1980s, they are shown to be still predominantly negative, stigmatizing and disempowering in Uganda (Obare et al., 2011; Nabunya et al., 2020; Kimera et al., 2020b; Kimera et al., 2021) and elsewhere (Sangowawa and Owoaje, 2012; Mburu et al., 2014; Dahlui et al., 2015; Asamoah et al., 2017; Crowley et al., 2021; Adams et al., 2022). These social conditions create additional, everyday adversities for these youths, leading to self-devaluation (Filiatreau et al., 2021), occupational deprivation (Kimera et al., 2020a) and discrimination (Sangowawa and Owoaje, 2012), among other consequences that jeopardize their well-being.

Other dimensions of the lives and social ecologies of YLWH can protect against this impact and facilitate well-being. Such dimensions have generally received limited scientific attention (Theron and Van Breda, 2021a,b), creating a dearth of knowledge on what enables resilience to HIV-related adversity in Sub-Saharan Africa. The few studies available have mainly focused on individual resources, noting the importance of young people's psychological attributes and coping mechanisms, such as psychological adjustment (Perez et al., 2021), health promoting behaviors (Harper et al., 2019) or prosocial behaviors (Bhana et al., 2016; Woollett et al., 2017).

Attention to the multisystemic drivers of resilience is more recently on the rise (Dulin et al., 2018; Crowley et al., 2021; Shevell and Denov, 2021; Theron and Van Breda, 2021a). This emerging research points to the importance of resources such as peer support (Mark et al., 2019), neighborhood social capital (Dulin et al., 2018), alongside specialized care and support (Fournier et al., 2014). However, there is still limited understanding of the resources that matter to YLWH and how these foster resilience in the face of HIV-related adversity. Especially resources within the social environments, which can offer the first level, sustainable, and immediate redress for YLWH's well being, have received less scholarly attention. This study adds to this body of research by exploring the social ecological resources that strengthen young people to deal with HIV-related adversity and challenging living conditions.

Drawing on the theoretical perspective of social ecological resilience, as developed by Ungar, this study focusses on "both the capacity of individuals to navigate their way to health-sustaining resources, including opportunities to experience feelings of well-being, and a condition of the individual's family, community and culture to provide these health resources and experiences in culturally meaningful ways" (Ungar, 2008, p. 225). Resilience processes are thus conceived of as the interaction between the person's actions in seeking resources that enable experiences of wellbeing in the face of adversity and the contextual responsiveness to provide or negotiate access to such resources.

Based on cross-cultural research, Ungar and Liebenberg (2011) locate resources for young people in three main areas: the individual, relationships with primary caregivers, and the broader spiritual, educational and cultural context. Ungar (2008) also identified seven tensions youths typically have to navigate in experiencing resilience (i.e., access to material resources, relationships, identity, cohesion, power and control, cultural adherence, and social justice).

Resonant with this framework, we sought to centralize YLWH's analyses and perspectives on social ecological resources that promote resilience in the face of HIV. This aimed at understanding and documenting the youth's unique ways of dealing with HIV related challenges in their daily life, and the social ecological responses that allow them to experience feelings of wellbeing. Previous research, using photovoice methodology with YLWH in western Uganda, has demonstrated how the centralization of lived experiences generates localized understandings, expanding dominant ideas about YLWH and what helps them best (Fournier et al., 2014).

In addition, we aimed to capture and disseminate empowering self-representations of YLWH as an antidote to the detrimental effects of stigma and social disqualification of people with HIV. When their unique, idiosyncratic viewpoints are given the necessary platform, they can prove to be shared and socially constructed, broadening the scope from individual experiences to social ecologies (Liebenberg, 2018). Participatory methods that aim at engaging marginalized or underrepresented perspectives in research, such as photovoice, can provide such a platform for young people to express and discuss their views with stakeholders, and ultimately stimulate social change and resilient responses at different socio-ecological levels (Suffla et al., 2012; Lofton et al., 2020). The research itself can then become an empowering practice that stimulates critical consciousness, affirms the voice and agency of those involved, challenges harmful hegemonic discourses, and calls for social justice (Seedat et al., 2015).

2. Methods

2.1. Participants and setting

The target group was young people, defined by the WHO as 10–24 years old, both male and female, who had been identified as HIV positive and also were aware of their serostatus. The study was conducted at a regional referral hospital in Kabarole district, western Uganda. This hospital is one of the major HIV treatment centers in the district and runs a weekly youth Anti-Retroviral Therapy clinic. The clinic also organizes a peer support group. Eleven youths aged 14–21 years were recruited from this peer support group. Selection was purposive based on the inclusion criteria of: being aged 10–24 years, being aware of the HIV status, having been on therapy for not less than 6 months, willingness to participate in multiple sessions of group and individual discussions, and being able to speak either English or the local languages Lutooro or Luganda. Exclusion was applied to potential participants who were physically and mentally unwell basing on the health workers' assessment. Priority was given to participants who were previously involved in a similar study with the same research team, documenting HIV-related adversities and challenges (reference published article). Those unavailable or unwilling to participate were replaced by other members of the peer support group. During the selection, efforts were made to include both male and female participants with varied ages.

2.2. Photovoice

This study was part of a larger participatory action research project. For this study, the photovoice method was chosen to provide youths with an opportunity to represent themselves and their lives. Participants were invited to analyze and represent in their photos and accompanying narratives the social ecological resources that to them

speak of resilience and allow them to experience wellbeing in the face of HIV. Giving them a camera centralized their perspectives, moving them from the margins to the center of knowledge construction (Van Wolvelaer et al., 2021). This not only gave the participants control over how they were represented but also potentially opened up new ways of seeing YLWH who are typically underrepresented or misrepresented by the outsiders' perspective (Jarldorn, 2019). In addition, we pursued meaningful engagement throughout the research and sought to engender a sense of ownership in participants, which is imperative to photovoice methodology (Wang, 2006). Photovoice had been used successfully with young people in Uganda and these previous studies (Fournier et al., 2014; Seedat et al., 2015; Kimera et al., 2020b) provided important insights and reflections that helped us to refine the research protocol for this study.

2.3. Data collection

The study protocol was reviewed and approved by the Research Ethics Committee of the AIDS Support Organization (TASO) in Uganda (reference number, TASOREC/009/18-UG-REC-009) and the Uganda National Council of Science and Technology (reference number SS 4587). We also sought permission to conduct this study from the hospital management and the youth antiretroviral therapy clinic. We contacted potential participants by telephone. In a private quiet room at the clinic, each potential participant was given information about the research project and then asked for their assent or consent to participate. In the case of minors (aged 14–17 in this project), informed consent was also obtained from their legal representatives. We also obtained consent to audio-record and photo release so that the dialogues could be quoted and the photos could be published or exhibited. We ensured that the identities of the participants were not revealed in the photos, transcripts and reports. Self-chosen pseudonyms are used throughout this article.

Seven consecutive sessions were organized. The first session aimed to establish rapport and introduce participants to the concept and procedure of photovoice. During this session, participants were also acquainted with representing themselves through photographs. The second session focused on resilience and guided participants to adopt a resilience lens to identify and appreciate the resources that strengthen them. As there is no vernacular idiom for resilience in the context of western Uganda, the working definition of resilience was "being able to cope with or overcome challenges related to living with HIV, because of individual and community strengths that allow you to experience feelings of wellbeing".

In the third session, the participants conceived and visualized images representing the resilience-enabling resources in the form of hand-drawn pictures as precursors for the photographs. At the end of this session, each participant was given a digital camera to take photographs documenting resilience in their everyday lives. They carried the camera with them and had the opportunity to take photographs until the next session. Accompanying narratives were either written down in a notebook or recorded audially by the participants.

In the fourth and fifth sessions, batches of photographs were received from participants. The photos were extracted from the cameras into a computer by the researchers and stored in different folders clearly marked with each participant's pseudonym. Participants were then asked privately to select photos they wanted to present in a group discussion and those they wanted to present to researchers only. All participants choose to present their selected photos in a group discussion. These two sessions were thus designed to create a safe space for participants to share their photos and narratives. Participants took turns presenting their photos using a laptop and projector provided by the researchers. The non-presenting participants were always invited to share their reflections on this presentation, and to guide the presenting participants in selecting the photos that the group most related to and found most empowering.

In the sixth and seventh sessions, participants discussed their selected photos around the questions "What does it reveal about what strengthens me in dealing with challenges in my life because of HIV? What does it say about how resources (people, places, things, …) can support me and can promote my wellbeing? Why is this an empowering image and how can this lead to more empowering representations of YLWH?" To stimulate group reflection, we used a variation of the "SHOWeD" technique, a well-established technique for facilitation photovoice discussions (Wang and Redwood-Jones, 2001): What do you See here? What is Happening? How does this relate to our lives? Why does this strength exist? What can we do to harness it? We aimed to create optimal conditions for dialogue and to implement the practice of speaking with, rather than for, others. The sharing of photos in this group allowed participants to move from critical self-reflection of lived experiences to an understanding of how resilience is fostered.

2.4. Data analysis

At various instances throughout the photovoice process, participants were stimulated to make meaning and co-construct interpretation of the photos and accompanying narratives in light of the central research question. They did this first at the level of their personal data, and later in group at the level of the data generated by all participants. As such, they carried out preliminary data analysis during the discussion of photos.

It involved the inductive identification and formulation of themes represented in participants' photos and accompanying narratives. The researchers facilitated a discussion about what the data meant to the youths, creating space for them to express their thoughts in terms that were familiar and meaningful in that context. Once they had clustered photos that spoke to similar and shared understandings of resources, they were invited to choose a name or description for each cluster, which then became an initial theme. In the results section, these themes are indicated by single quotation marks. Based on this preliminary inductive content analysis by participants, subsequent analysis was undertaken by the researchers based on their transcripts of group discussions, the photos and their captions, and the researchers' field notes. Thematic analysis was conducted based on the themes identified by the participants in relation to the resilience literature, which resulted in latent themes clustering the participants' initial themes.

We drew on the resilience literature developed by Ungar et al. (2007) and Ungar and Liebenberg (2011). This is further elaborated in the results section, where the study's findings are situated in relation to

tensions in resilience identified and validated on the basis of cross-cultural research (Ungar, 2008). Nevertheless, we have taken into account the contextually specific ways in which resources become meaningful and resilience is understood and observed (Ungar and Liebenberg, 2011; Vindevogel et al., 2015) as well as the notion of resilience as "a dynamic state of tension between and among individuals, families, communities and their culture" (Ungar et al., 2007, p. 301).

As these thematic areas and tensions should be understood as interlocking and intersecting, they are not discussed separately but are highlighted from the data in this study. By letting the data speak, a more integrative and contextually relevant analysis can ensue. In our experience, taking the time to work closely with these young people created a rich discursive space for deconstructing and understanding resilience in the face of living with HIV in Uganda.

Following these sessions, the participants were actively involved in determining strategies for research valorization, whereby the generated insights are translated into actions that benefit society. The sharing of photos and accompanying narratives beyond the safe space of the research group has the potential to elicit critical consciousness, critical dialogue and knowledge production, and ultimately social change (Wang, 2006; Jarldorn, 2019). The youths proposed various action plans to reach various audiences and influence different socio-ecological levels, including taking the visual narratives to schools and organizing debates with students to raise their awareness of the (social and institutional) challenges and resources for YLWH. Another action plan involved the publication of a photo book, with participants deliberately selecting the photos and accompanying stories they felt were important to share with a wider audience. Engaging them in devising action plans for their visual stories and included messages to influence their society for the better gave them a sense of agency for social change and unleashed their potential as change agents (Suffla et al., 2012), as illustrated in the findings section.

3. Findings

3.1. Material resources

Some of the themes generated by participants relate to the availability of material resources that can facilitate feelings of wellbeing: "treatment to improve health", "farming for food and income", "means of transport", "knowledge about health", and "engage in income generation". Ungar et al. (2007, p.296) also refer to "the availability of structural provisions, including financial assistance and education, as well as basic instrumental needs, such as food, shelter and clothing, access to medical care and employment".

The prominence of such – seemingly basic, everyday – material resources in the participants' photos and narratives suggests that such resources are not self-evident to them. In addition to living in a resource-limited country, the youths' narratives make clear that it is often even more difficult for YLWH to make ends meet and fulfil instrumental needs. Limitations in material resources lead to restrictions in other areas of life. As a result, documenting the importance of material resources from the lived experience acquires significance for understanding resilience in this context.

For Unique Unice, for instance, being given a bicycle and choosing to ride one in defiance of prevailing gender norms helped her access health care and experience feelings of wellbeing:

> "This small bike (on the photo) is like a good friend to me. It used to be very hard for me to walk all the way from home to come here to the clinic for my appointments. But since my uncle bought me this bike, I ride fast and get here in a short time. In my area it is not common for girls to ride bikes, but for me, I do not mind because those who say that cannot give me money for the *boda boda* (passenger motorbike)." – Unique Unice, 18-year-old girl

Maggie was left to look after herself, and showed in her photographs (e.g., Figure 1) how she had become self-reliant rather than dependent on others for material resources:

> "I started working in the market when my mother died and I could no longer go to school. My business gives me money for transport to the clinic and to buy other things I need as a girl because there is no one else to buy for me. In the evenings I come to the streets to sell fruits and vegetables to motorists. I do not care what others say about me because I know no one can look after me. Instead of coming to the streets to beg, I come to make money." – Maggie, 19-year-old girl

The mere fact that such material resources were available – either self-generated or provided by others – was seen as valuable, but also the experience that these resources in turn facilitated access to other resources and helped to navigate tensions in other areas was repeatedly emphasized. In particular, when material resources supported "being self-reliant", participants found them helpful in resolving tensions around identity as well as power and control. These are discussed in the next sections.

3.2. Identity

HIV has a profound effect on the youths' sense of identity and self-image. Ungar and Liebenberg (2011, p.136) conceptualize identity as "personal and collective senses of purpose, self-appraisal of strengths and weaknesses, aspirations, beliefs and values, including spiritual and religious identification." In interactions with their social environment, they often see their identity confined to being a seropositive person. HIV then becomes a ground for dehumanization,

FIGURE 1
"Instead of coming to the streets to beg, I come to make money" Maggie, 19-year-old girl.

disqualification, and rejection. The participants' sense of identity was strongly influenced by the dominant trope of YLWH as weak, suffering and vulnerable people.

"Doing something you like" was collectively identified as an important theme, expressing how resources helped YLWH to cultivate a sense of self and purpose. As echoed in the following quotes, resources empowered participants to experience and embody a sense of themselves as competent, capable, talented and strong people (See Figure 2).

> "When my father died, he left this land for me and the neighbours thought I was going to sell it because they know I am sick (HIV positive) and they thought I was also going to die. They were also saying that I am weak and I cannot do any farming. I have shown them that they were wrong because I did not die and I did not sell the land. I am now growing maize and yams on this land, which I sell in town to get money to take care of all my needs. With my own little money I am building this small house for my family. I am very happy because many people who are older than me and do not have HIV cannot build their own houses." – King, 17-year-old boy

> "I make these baskets in my free time to keep myself busy and not to think about the HIV in my life. I sell the baskets at 30,000 Shillings each to people who use them to serve *kaalo* (millet meal) or for decoration. It is good for young people with HIV to learn to work with their hands and not to see themselves as needy people or weak people who cannot work." – Passion, 17-year-old girl

The search for a positive sense of self and the practice of "loving yourself" were also seen as facilitating relationships with others and gaining relational support, as discussed further. "In life we choose what we want" says Unique Unice. "If you have HIV and you do not love yourself then who will love you? But when you love yourself, you take good care of your life and you look good, then others will also love you." – Unique Unice, 18-year-old girl.

FIGURE 2
"I make these baskets in my free time to keep myself busy and not to think about the HIV in my life." Passion, 17-year-old girl.

3.3. Power and control

Participants also struggled with tensions in experiencing power and control in their lives, after a period of profound loss following the HIV diagnosis. Ungar and colleagues define "power and control" as "the capabilities within, and the resources surrounding, the participants to experience material and/or discursive power in terms meaningful to their context" (Ungar et al., 2007, p. 298).

The youths repeatedly emphasized how they sought to disprove disempowering discourses and representations of YLWH and to deal with disenfranchisement. Junior, a 14-year-old male participant, also framed one of his photos in relation to disempowering representations and approaches to YLWH in society by stating: "I want to show that even though people call us 'sick children', we can live life like other children. We can take care of ourselves and do chores like other children at home."

The interconnectedness between resources like education and tensions in power and control also featured prominently in Josh's photos and narrative, as he spoke at length about the importance of "looking beyond your situation". The following quote and photo (Figure 3) are illustrative:

> "Being HIV positive cannot stop me from achieving the things I have always wanted in my life. I always wanted to study and become a doctor and I know that this dream is about to come true because I am now studying at (name of institution) to get my diploma in clinical medicine. My studies have made me understand HIV and how to live a healthy life. My life has changed so much that those who saw me a few years ago might not recognize me. I also want to use this knowledge to help other young people with HIV." – Josh, 20-year-old boy

3.4. Cultural adherence

Participants emphasized the importance of "trying to live a normal life" and being able to "achieve what society does not expect", which they collectively identified as important themes. These themes relate to tensions in cultural adherence, which is about "adherence or opposition to one's local and/or global cultural practices, values and beliefs" (Ungar et al., 2007, p. 299).

Cultural values and beliefs play a vital role in shaping the norms and expectations that exist within a community. According to the participants, young people in their communities are generally expected to be busy, productive and contributing to their family, community and society. YLWH are mostly seen as unable to achieve this, because of their serostatus. They are thought of as weak, suffering and vulnerable, which risks relegating them to the margins of society.

While participants experienced that it may be more difficult for them to act, interact and fulfil the roles set out by cultural practices, values and beliefs, they also spoke at length about how strengthened they felt when they were able to live up to the prevailing norms and expectations, and feel that they could live a "normal life". This is illustrated in Figure 5 and the following quotes:

> "I try to live my life like other youth even if I have HIV. I am always smart, I buy for myself nice clothes and I am always happy.

FIGURE 3
"Being HIV positive cannot stop me from achieving the things I have always wanted in my life." Josh, 20-year-old boy.

> I realized that I can choose to enjoy life or to live a miserable life. I thank people like doctors who have counselled me and advised me to work hard and not to wait for other people to give me help." – King, 17-year-old boy

> "I took a photo of my school. At school, I am always busy concentrating on my studies because I know I will have a good future if I study. I don't care what is in my body or what other people say about me because if I concentrate on that, it will not change anything. My mother taught me to ignore people and focus on what is good for me." – Junior, 14-year-old boy

Rather than adhering to the prevailing expectations about YLWHA and accepting the disqualification, disempowerment and even dehumanization that this entails, YLWH in this study plainly opposed to this and aimed to exemplify alternative representations that can change these cultural practices, values and beliefs around HIV and the young people living with it.

Resources related to resolving the tension of cultural adherence is what the youths thematized as "being busy", "having future plans", and "focusing on set goals". Resources were seen as meaningful if they strengthened them to pursue meaningful roles and occupations in relation to socio-cultural views and ideals. Opportunities for them to keep busy and experience progress towards set goals or aspirations, e.g., through (informal) education or (voluntary) work, were valued because they allowed them to conform to practices, values and beliefs generally held for youths and not to feel different. For them, this meant working hard to achieve something, and even feeling the urge to work harder than others in order to surpass prevailing academic, economic, and cultural expectations and be someone in their society.

3.5. Relationships

The photos and narratives further showed appreciation of supportive relationships, often forged amidst myriad disempowering encounters. Relationships in and of themselves turn out to be resourceful in dealing with challenging situations, but are also instrumental in obtaining access to other resources (Ungar et al., 2007). The youths identified the following related themes: "peer support", "peer role models", "family support", and "support from healthcare workers", hence referring to both informal and formal supports.

Role models empowered them to develop a positive outlook on the future and reinforced their own efforts and capacities to experience feelings of wellbeing. Family members, neighbors and friends were also able to foster resilience in the face of HIV-related challenges, as evident in the following quotes and Figure 5:

> "I took this photo to show my mother's love. From the moment my father died in 2015, our mother has been there for me and my siblings. She cares for all of us by feeding us and protecting us equally, just like this hen takes care of her chicks (on the photo). It has not been easy but at least I know there is someone who cares for me." – Brenda, 15-year-old girl

> "This is a photo (Figure 5) of me walking with a friend. I found out that on this earth you need someone with whom you can take a journey of life. That person should also be positive and should be able to hold your hand and support you through some difficult times. When I lost my mother, the only parent I had, I felt very bad and even stopped taking my ARVs (antiretroviral medicine).

FIGURE 4
"I try to live my life like other youth even if I have HIV" King, 17-year-old boy.

> If my close HIV-positive friends had not comforted me, I would also be dead now. I thank them very much because I know that I'm alive because of them." – Josh, 18-year-old boy

The participants emphasized the importance of reciprocity in relationships and thematized "being of value to others" and "getting recognition": being able to participate and contribute, feeling needed and appreciated, and experiencing belonging. Such relationships were seen as resourceful in nurturing and maintaining a positive, coherent sense of self and thus intersect with identity tensions.

3.6. Cohesion

Participants' photos also spoke to managing tensions in cohesion or "the convergence of one's sense of responsibility to self and a philosophy of duty to one's community's greater good" (Ungar et al., 2007, p. 298). Cohesion is about "feeling of being a part of something larger than one's self socially and spiritually" (Ungar and Liebenberg, 2011, p. 136). The following quotes are illustrative:

> "I enjoy playing football with my friends at school and in the village. Whenever I am playing football, I enjoy and forget about all the worries I may have. I am also a very good striker and my team cannot win without me. When they are going to play a match or for training, they have to call me." – Josh, 18-year-old boy

> "These (Figure 6) are guitars in our music room. When I joined the band, I learnt to play many instruments, and young people and adults in the community started to admire me. I felt very good and important because they would even shout my name during performances. I got many friends in the community who wanted me to teach them how to play band instruments. Playing in the band took away all the fears I had." – Inbox, 19-year-old boy

FIGURE 5
"I thank them very much because I know that I'm alive because of them" Josh, 18-year-old-boy.

FIGURE 6
"I got many friends in the community who wanted me to teach them how to play band instruments. Playing in the band took away all the fears I had." Inbox, 19-year-old boy.

FIGURE 7
"I do not know what lies before me but I now it will be better." Abooki, 19-year-old boy.

Participants also valued supportive and safe spaces in the community and in youth services that make them feel welcome, accepted and valued, regardless of their serostatus. Such spaces are seen as important in managing tensions in cohesion and also in identity. In her photos and narrative, Maggie referred to the "youth-friendly health centre" as such a safe and supportive space for her and other YLWH:

> "I took a photo of part of the poster for our clinic. In my language (rutooro), '*irwarro*' means clinic. This clinic is like home. The nurses are nice to me and other youths who come here. Whenever I come to the clinic, I find other youths and we play different games together. I do not want to miss days of coming to the clinic. Because we have different games here, other children in the community come here to play with us and they have become our friends. They do not discriminate against us even if they know that we have HIV." – Maggie, 19-year-old girl

3.7. Social justice

Participants' accounts of how they try to manage the tensions mentioned above appear to be strongly intertwined with individually and collectively experienced injustices. Such injustices affect, among other things, their sense of identity, cohesion, power and control, and deeply permeate their daily lives. These young people are clearly trying to forge a position in which they can experience social justice.

According to Ungar et al. (2007, p. 300), "social justice is a theme that captures experiences of prejudice and dynamics of sociopolitical context encountered individually, within one's family, in one's community and culture, as well as experiences of resistance, solidarity, belief in a spiritual power, and standing up to oppression."

Spirituality, for instance, figured in participants' photos and narratives as a resource in situations of social injustice that create tensions in identity and cohesion. Maggie's quote is illustrative:

> "This is a church close to our home. Whenever I feel sad or when someone has said bad things to me, I go and sit in this church and pray. It gives me hope that I have a father in heaven even if my father on earth died. I always feel good when I go to church and I pray. The Bible says: 'Cast your burdens to Jesus for he cares for you.'" – Maggie, 19-year-old girl

The theme of social justice is further about finding a meaningful role in the community and about social equality (Ungar and Liebenberg, 2011). The themes identified by the participants as "constantly seeking better life" and "persevering" against all odds strongly attest to their perpetual quest for justice and for experiencing well-being and inclusion amidst the disadvantaging and disempowering forces in their social ecologies. These themes also reverberate the conceptualization of resilience as "a condition of becoming better" (Ungar et al., 2007, p. 301).

This directs our gaze towards the small but significant daily acts and activities undertaken by the participants, their significant others and youth services to respond to, resist, refute and contradict contextually enshrined expectations, representations and approaches to YLWH. This is illustrated by the quote of Abooki, who stated:

> "I have allowed myself to be on the move like this water in the stream (Figure 7). I do not stay in one position because I have to continuously look for people and things that can help me in my situation. I have to look for information, I have to look for money, and I have to look for caring people. I also have to move away from bad situations, from people who abuse me, from things that remind me of the past and from those who discriminate me. I do not know what lies before me but I know it will be better." – Abooki, 19-year-old boy

Throughout the study it was recognised that these young people had become used to perceiving themselves in a disempowering way and it was initially difficult for them to appreciate their own capacities and social ecological resources. Being guided to do this was reported to be very empowering, both individually and as a group, as the process and advanced insights seemed to be an antidote to the structural disempowerment they had bought into. The following quotes illustrate the importance of a social justice approach to resilience research:

> "When people come to talk to us, we people with HIV, they usually ask us what problems we have. Many young people with HIV are used to only seeing problems. Sometimes we think that if we tell people our problems, they will help us or give us something. But with what we have talked about now, I see that we have the ability to live like others, using our own energy, using the things and people around us, and not just to make others feel sorry for us, that 'oh sorry this one has HIV and he is going to die'. Because we are not going to die any time soon, we are going to die like all other people even those without HIV. We, young people with HIV, have to change our thinking and then other people will change the way they look at us". – Inbox, 19-year-old boy

> "I have never had a discussion like this, even in our meetings and conferences of the peer support group. We always talk about things that affect us, how to comply with our treatment and how to avoid stigmatisation. I think it is important to start being happy about ourselves, and realize that we can live like other people, and even better. Someone can even ask you 'what do you like about yourself?' and you say 'nothing'. But there are many things we can be happy about. I now have a child, but many women are infertile, even those without HIV. We have heard what the young people here can do that those without HIV cannot do. We must thank God for these things and stop thinking that we have no use in this world." – Passion, 17-year-old girl

4. Discussion

This study sought to explore YLWH's perceptions and representations of social ecological resources that enable them to experience feelings of well-being and contribute to resilience in the context of HIV-related challenges. Photovoice methodology was used to gain an insider's perspective on participants' everyday realities and lived experiences, and to provide them with a platform for self-representation. Drawing on their expertise-by-experience, YLWH scrutinized their daily lives in search of meaningful events and experiences that they associate with resilience.

These everyday experiences – while seemingly trivial or mundane – are crucial to deconstructing and understanding how HIV infiltrates all spheres of life, how YLWH and their contexts deal with this and how this affects YLWH's sense of wellbeing. In addition to demonstrating that HIV generates challenges and evokes social injustice in many subtle and not-so-subtle ways, this research adds to the body of knowledge on youth resilience in Sub-Saharan Africa by documenting multisystemic resilience resources for young people living with HIV in western Ugandan communities.

Our findings resonate with Ungar (2008)'s cross-cultural insights into the tensions that young people must navigate to experience resilience. Their daily efforts to respond to, resist, refute and contradict harmful direct and indirect effects of HIV on material resources, identity, power and control, cultural adherence, relationships, cohesion, and social justice are richly documented in their photographs and narratives.

Notwithstanding these global characteristics of resilience, the study's findings also illustrate the contextual entanglement of challenges and resources, as well as what are considered positive outcomes for these youths. The emic perspectives on resilience and the constitutive everyday supports in the face of HIV affirm the need for a contextually affiliated approach, both for how resilience is understood and conceptualized (Vindevogel et al., 2015) and for identifying the constellation of multisystem resources that matter (Theron and Van Breda, 2021a).

The study shows that how young people experience and navigate tensions in resilience reflects how HIV has come to be understood and addressed in their context. This relates to local philosophies, based on the ontological and normative systems in place (Flint, 2018), and intersects with the social, cultural, political, religious and historical dimensions of that locality. In Sub-Saharan African countries like Uganda, strong cultural and religious systems influence social constructions of YLWH (Odokonyero et al., 2022) and, in turn, the support available to them. As such, contextual factors and dynamics affect resilience processes and outcomes (Crowley et al., 2021). Many of the resources identified by the youths in this study appear to support their struggle to show humanness, relate communally and restore or gain social harmony, which is the highest good from an Afro-communitarian point of view (Flint, 2018).

YLWH are bound to experience multiple forms of social injustice that undermine their ability to live up to these values and norms. Such injustices arise in interaction with both informal and institutional layers of the social ecology and lead to dehumanization, seclusion and discord among other consequences (Kimera et al., 2020b). The resources documented in this study can be understood as significant in countering individually and collectively experienced injustices such as the social devaluation, discrimination and exclusion of YLWH in families, communities, schools and workplaces, among others.

The resources that support youths in navigating and resolving such HIV-related challenges and tensions in resilience equally stem from their social and institutional contexts. These resources are mainly located in families, peer groups, schools, health centers and communities. Thus, this study confirms the conceptualization of resilience as the collective capacity of the individual and the social ecology (Ungar, 2008; Theron and Van Breda, 2021a). Furthermore, this study shows that youth services, HIV clinics/health centers and schools, among other institutionalized supports, have the potential to be supportive spaces that empower YLWH and mobilize resources in the wider community for this purpose, if they integrate resilience perspectives in their daily operations and intervention programming. This confirms findings from earlier studies on YLWHA in Uganda (Nabunya et al., 2020).

Macrolevel systems, such as local and national government or religious institutions, were not explicitly highlighted by participants, even though the body of literature on youth resilience has convincingly shown that such macrosystems can play an important role in co-constructing resilience pathways and strengthening supports within and across other systems (Shevell and Denov, 2021). There may

have been photographs that participants could not take or stories that they could not tell, simply because of a lack of resources such as an effective anti-stigma program or legal system to tackle discrimination.

In addition, the multisystemic supports highlighted by YLWH in this study appear to be highly incidental and situational, not widely available or structurally embedded. Statements such as "I live because of them" and "at least I know there is someone who cares for me" speak to the overly challenging and structurally disadvantaged context in which YLWH find themselves. While such incidental experiences of resilience can be very powerful and meaningful for young people, as this study shows, they risk being hampered by the unavailability of structural resources and even existing structural barriers to resilience in society (Wessells, 2018). This finding confirms the earlier identification of policy and programmatic gaps in the HIV care continuum in Uganda (Obare et al., 2011).

This study therefore endorses the call to strengthen a nested system of social-ecological resources and resilience processes around youth, but also to address the injustices that arise from these very social ecologies and continue to jeopardize the wellbeing of many young people in Uganda and other settings (Hart et al., 2016; Crowley et al., 2021; Wessells, 2021). Policy makers and practitioners working to support YLWH should take heed of the multisystemic sources of resilience as well as the current lack of structural support/existing structural barriers to it. Such macrolevel actors are in a position to address systemic and pervasive injustices and to minimize the ensuing risks and challenges for YLWH, alongside structurally embedding resources that enable them to overcome these and even thrive while living with HIV.

Building strong ecologies of resilience should also be at the forefront of the global HIV/AIDS-agenda if we are to achieve the Sustainable Development Goal of ensuring healthy lives and promoting well-being for all at all ages. This requires moving beyond the dominant bio-medical approach to a holistic approach that considers the full scope of biomedical, psychological, social, and societal challenges (Goodenow and Gaist, 2019), grafted upon the understanding of the complex dynamics between health and society. Recent studies suggest that approaches from the social sciences are essential to understand and address the individual, interpersonal, community, societal, and structural factors influencing HIV/AIDS-related disparities worldwide (Goodenow and Gaist, 2019; Odokonyero et al., 2022).

In addition, our study shows that emic perspectives, and in particular expertise-by-experience, should inform this approach in order to be in sync with the often complicated life situations in which young people try to manage their health and experience wellbeing. This requires acknowledging YLWH as meaning makers, knowledge creators and change agents, and leveraging their potential to advance evidence, interventions and policy development (Suffla et al., 2012; Fournier et al., 2014). Participatory methods such as photovoice have been underutilized in the HIV field, but are proving to provide powerful insights that can catalyze social action and change (Wang and Burris, 1997). This study's findings should be interpreted against the backdrop of some limitations. Recruitment of participants from an existing peer support group may have biased the results, as these young people already have experience of health care and peer support and may therefore have access to more resources or have developed a more positive view of social-ecological support. The study did not analyze the positionality of the participants or the characteristics of their social ecologies. It is possible that social ecologies respond differently or mobilize more/different resources depending on these factors. Furthermore, experiences of resilience are strongly influenced by spatial and temporal dynamics (Ungar et al., 2007). Future research can address how experiences of resilience evolve as context changes over time. In addition, a thorough gender analysis could reveal differences between boys and girls.

Only when the intersecting sources and barriers to resilience within and across all social-ecological levels are made visible, through this and future research, can they be addressed and can pathways be illuminated for research, policy and youth service programming to support resilience of young people living with HIV in western Ugandan communities.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Uganda National Council of Science and Technology (UNCST); Institutional Review Board of The AIDS Support Organization (TASO) in Uganda; Commissie Medische Ethiek Vrije Universiteit Brussel; Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin. Written informed consent was obtained from the individual(s), and minor(s)' legal guardian/next of kin, for the publication of any potentially identifiable images or data included in this article.

Author contributions

SV contributed to the conception and design of the study, the analysis and interpretation of data, and the reporting and publishing of the findings. EK contributed to the design of the study, the acquisition, analysis, and interpretation of data, and the reporting and publishing of the findings. All authors contributed to the article and approved the published version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The significance of feeling safe for resilience of adolescents in sub-Saharan Africa

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Introduction: Adolescents in sub-Saharan Africa (SSA) are exposed to several challenges and risk factors, linked to historical legacies. Sub-Saharan Africa has one of the highest rates of poverty and inequality in the world, is one of the regions most negatively affected by climate change, performs poorly on many health measures, and has high rates of different forms of violence, especially gender-based violence. These contextual challenges impact adolescent mental health outcomes, preventing them to access resilience-enabling pathways that support positive outcomes despite adversity. This study aimed to contribute to knowledge generation on resilience of young people in the understudied SSA region by investigating which variables directly (or indirectly) affect the resilience of adolescents.

Methods: Purposive sampling was used to collect quantitative survey data from 3,312 adolescents (females = 1,818; males = 1,494) between the ages of 12 and 20 years, participating in interventions implemented by a non-governmental organization, the Regional Psychosocial Support Initiative. Data were collected in Angola (385, 11.6%), Eswatini (128, 3.9%), Kenya (390, 11.8%), Lesotho (349, 10.5%), Mozambique (478, 14.4%), Namibia (296, 8.9%), South Africa (771, 23.3%), Uganda (201, 6.1%), and Zambia (314, 9.5%). The survey collected data on socio-demographic status, resilience (CYRM-R), depression (PHQ-9), self-esteem (Rosenberg Self-Esteem Scale) and feelings of safety (self-developed scale). Mental health was defined as lower levels of depression, higher levels of self-esteem and higher levels of feeling safe. A mediation analysis was conducted to investigate the relationship between the predictors (the socio-demographic variables) and the output (resilience), with the mediators being depression, self-esteem and feeling safe (which all link to mental health).

Results: This study contributes to a gap in knowledge on country-level comparative evidence on significant predictors that impact resilience outcomes (directly or indirectly) for adolescents in sub-Saharan African countries. The results indicate that, when considering all countries collectively, feeling safe is the only predictor that has a significant direct effect on overall resilience and personal resilience, but not on caregiver resilience. When considering each country separately, feeling safe has a direct effect on overall, personal and caregiver resilience for all countries; but not for South Africa and Mozambique.

Discussion: The results provide evidence on which to craft youth development interventions by measuring mediators (depression, self-esteem and feeling safe)

and resilience for adolescents in sub-Saharan Africa. The overall results of the present paper point toward a contextually relevant pathway to supporting their resilience, namely, the need to systemically target the creation and/or strengthening of structures that enable adolescents to feel safe.

KEYWORDS

adolescence, resilience, mental health, sub-Saharan Africa, depression, self-esteem, safety

1. Introduction

Of 1.3 billion adolescents world-wide in the United Nations Children's Fund [UNICEF] (2022), an estimated nine out of ten live in the developing world (Gupta et al., 2014), with almost one quarter (23%) of the population (aged between 10 and 19 years of age)–the greatest proportion of the population (United Nations Children's Fund [UNICEF], 2019a)–in sub-Saharan Africa (SSA). Despite this, the available literature on youth development in sub-Saharan Africa is limited.

During adolescence, individuals acquire physical, cognitive, emotional, and social resources that become the foundation for their future health and wellbeing (Patton et al., 2016). However, this period of turmoil is characterized by adolescents being confronted by many changes, which increase their vulnerability to risks and may inhibit their capacity to manage challenges (Ogden and Hagen, 2018). Mental illness has become a leading cause of death and disability for adolescents (Vigo et al., 2016; Uddin et al., 2019), with many studies associating mental health outcomes to resilience (Konaszewski et al., 2021; Mesman et al., 2021).

Whereas there has been an increase in the global incidence of mental disorders, and more so in low-and-middle-income countries (Patel et al., 2018), the problem is particularly amplified during adolescence. The World Health Organization (WHO) indicates that up to one in five adolescents will experience a mental disorder each year, that self-harm is the third leading cause of death for adolescents, and that depression is among the leading causes of disability (World Health Organization [WHO], 2014).

While various studies on mental health exist, Glozah (2015) found that most of the knowledge about the psychosocial context of adolescent health and wellbeing is based on western samples. Existing research tends to report on data from individual countries rather than across countries or across countries in the global north or outside of sub-Saharan Africa (Gloster et al., 2020; Campbell et al., 2021; Jefferies et al., 2021a,b; White et al., 2021) or between countries in the global north and sub-Saharan Africa (Alonso et al., 2018; Reed et al., 2018; Wu et al., 2018; Yu, 2018; Alzueta et al., 2021; Höltge et al., 2021) and not exclusively in sub-Saharan Africa, highlighting the severe lack of research on mental health in the region (Sankoh et al., 2018).

A systematic review exploring mental health problems of adolescents in sub-Saharan Africa highlights the enormity of the problem, with prevalence rates of 26.9% for depression, 29.8% for anxiety, 40.8% for emotional or behavioral problems, 21.5% for post-traumatic stress disorder (PTSD), and 20.8% for suicidal ideation (Jörns-Presentati et al., 2021). Young people living with HIV in sub-Saharan Africa are particularly at risk of common mental health disorders, especially depression and anxiety (Too et al., 2021), with 25% of HIV-positive adolescents having a psychiatric disorder and up to 50% showing emotional or behavioral difficulties or psychological distress (Dessauvagie et al., 2020).

Studies that do examine comparative mental health or resilience in sub-Saharan Africa tend to be qualitative (Lund, 2010; Bird et al., 2011; Esan et al., 2019) and include few countries (Esan et al., 2019; Kuo et al., 2019), or are based on systematic reviews (Pedersen et al., 2019; Theron, 2020a; Chen et al., 2021; Scharpf et al., 2021; Trudell et al., 2021). Existing literature also tends to focus either exclusively on mental health (Auerbach et al., 2018; Sankoh et al., 2018; Yu, 2018; Żemojtel-Piotrowska et al., 2018; Chen et al., 2021) or resilience (Ungar and Liebenberg, 2011; Theron, 2020b; Höltge et al., 2021; Jefferies et al., 2021b).

The high incidence of challenged adolescent mental health requires early intervention (Catalano et al., 2012; Collishaw, 2015; Das et al., 2016). Yet, limited attention has been paid to factors that significantly affect adolescent mental health and wellbeing (United Nations Children's Fund [UNICEF], 2019b). Rather, existing studies foreground sexual reproductive health, with scant insight on the numerous factors that negatively impact the health and wellbeing of adolescents (Hervish and Clifton, 2012; Kabiru et al., 2013).

The high demand on intervention to support positive adolescent mental health points to an ever-widening mental health treatment gap for this group in sub-Saharan Africa (Owen et al., 2016). The Lancet Commission on global mental health and sustainable development suggests that a shift in the focus of the global mental health agenda is required "reducing the contribution of mental disorders to the improvement of mental health for whole populations and reducing the contribution of mental disorders to the global burden of disease" (Patel et al., 2018, p. 1). Prevention initiatives during this stage may help decrease problem severity, deter comorbidity, and reduce the chances of new problems emerging (Ogden and Hagen, 2018).

Despite adolescents comprising approximately one-quarter of the population of sub-Saharan Africa, the health of adolescents has been understudied in this region (Ross, 2021). Although some knowledge exists, gaps remain in the exploration of resilience-enabling pathways which enhance mental health, as well as how these may be similar or different across low-and-middle-income countries in sub-Saharan Africa (Bosqui and Marshoud, 2018). The purpose of the article is to use comparative evidence (across sub-Saharan countries, gender and age) of adolescent resilience

and mental health outcomes to craft an evidence-based resilience framework to direct relevant support for youth development in sub-Saharan Africa. As such, the question directing this article is: Which predictors have a direct effect on mental health (as mediator) or direct or indirect effect on resilience (as outcome) in sub-Saharan Africa? The mediator (mental health) was measured by depression, self-esteem and safety, as many studies have shown that mental health is affected by depression (McLeod et al., 2016; Aluh et al., 2018), self-esteem (Keane and Loades, 2017; Minev et al., 2018) and safety (Mori et al., 2021; Fossum et al., 2023).

In the current study, a mediation analysis was conducted to investigate the relationship between the predictors (the socio-demographic variables) and the output (resilience), with the mediators being depression, self-esteem and feeling safe (which all link to mental health). Most commonly, resilience would be operationalized within a statistical model as a moderator or a mediator - that is, interrupting the expected association between some adversity and poorer outcome in the presence of higher levels of resilience. For resilience as mediator/moderator, Karatzias et al. (2017) assessed resilience and depression as mediators between traumatic life events (predictors) and subjective physical and mental health (outcomes) and found that resilience mediated the relationships between traumatic life events and subjective physical and mental health. More recently, Lin et al. (2020) assessed resilience as mediator between bullying experiences (both victimization and perpetration; predictors) and mental health (outcome) in China and Germany and found that personal resilience partially mediated the influence of victimization on mental health in both countries. However, some literature has considered resilience as outcome variable, for example, Lancaster and Callaghan (2022) assessed exercise, location, life-orientation, mental health, and sleep quality as key moderators and mediators of resilience.

In accordance with recent studies such as the one by Lancaster and Callaghan (2022), we were interested in studying the mediating role of mental health on resilience, as this is a topic that has not been researched much. We considered depression (Sit et al., 2022), self-esteem (Preston and Rew, 2022) and feeling safe (Luu et al., 2021) as mediators as these have been shown to be significantly related to mental health and tools and systems to improve mental health have been understudied in low-resource environments such as SSA (Goodman et al., 2021).

2. Literature review

2.1. Contextual challenges impacting on adolescent development in sub-Saharan Africa

Adolescence is a critical stage of psychosocial development during which individuals are vulnerable to numerous risks while at the same time being exposed to opportunities for development. Adolescents in sub-Saharan Africa are particularly vulnerable given the contextual challenges they face, evidenced by the knowledge available on depression on the continent (Sherr and Cluver, 2017; Kulisewa et al., 2019). Global South-based evidence is needed given the context challenges in which many adolescents in sub-Saharan Africa are living. Many of these challenges are rooted within the historical legacies of deeply held pre-colonial ethnic-specific political centralisation; the damaging period of slave trade; the artificial creation of colonial borders by Europeans; and the extractive and oppressive period of colonization (Michalopoulos and Papaioannou, 2020). Adolescents in sub-Saharan Africa are growing up in complex environments largely shaped by history. From a chronosystems perspective, individuals are shaped by the historical times and events they experience over their lifetime; when in their life course transitions and events happen; the social and historical relationships they have; the choices they make within the opportunities and constraints of historical and social circumstances (Bronfenbrenner and Morris, 2007). "It is, thus, vital understanding how historical legacies influence people's views, attitudes, incentives, and decisions" (Michalopoulos and Papaioannou, 2020, p. 56) Sub-Saharan Africa has one of the highest rates of poverty (Anyanwu and Anyanwu, 2017) and inequality (Bhorat and Naidoo, 2018) in the world, leading to massive structural disparities resulting in limited and unequal access to educational, health, and protection services (Castells-Quintana et al., 2019). In addition, the region performs poorly on many health measures indicating that it is most affected by numerous health challenges associated with limited access to adequate health care (Wang et al., 2020). Sub-Saharan Africa is also one of the region's most negatively affected by the devastating impact of climate change and global warming (Asongu et al., 2018), despite making the least contribution toward climatic changes at a regional and global level (Hickel, 2020; Ritchie et al., 2020). Finally, sub-Saharan Africa has high rates of different forms of violence, especially gender-based violence (Nabaggala et al., 2021). These challenges leave many adolescents with limited access to resilience-enabling resources and exposure to numerous risk factors that may impact their mental health outcomes.

Available data on poverty show that poverty decline in sub-Saharan Africa has been slow, especially when contrasted to other regions in the world (Anyanwu and Anyanwu, 2017; Asongu and Le Roux, 2019). Research on poverty levels suggests that 38.3% of the population (headcount ratio) in sub-Saharan Africa lives below the extreme poverty line of US$ 1.9 per day. Of concern is that according to the United Nations Development Programme [UNDP] (2017), "ten out of the 19 most unequal countries in the world are in sub-Saharan Africa" (Odusanya and Akinlo, 2020, p. 177).

When comparing health indicators for sub-Saharan Africa and global rates, profound inequalities emerge. As outlined by Wang et al. (2020), under-5 mortality rates in sub-Saharan Africa (74.1 deaths per 1,000) were just below double the global rate (37.1 deaths per 1,000); Life Expectancy at birth was 73.5 years at a global level but only 64.5 years at in sub-Saharan Africa (9 years less); and Healthy Life Expectancy was 6.1 years less in sub-Saharan Africa (57.4 years) than at the global level (63.5 years). In World Health Organization [WHO] (2015), sub-Saharan Africa accounted for 66% of global maternal deaths, with 1 in 31 women in sub-Saharan Africa at risk of maternal death compared to 1 in 4,300 women in developed countries. Sub-Saharan Africa has the highest rate of adolescent pregnancy in the world, with almost one in five (19.3%) adolescents in sub-Saharan Africa becoming pregnant (Kassa et al., 2018).

HIV/AIDS continues to be a leading cause of death in sub-Saharan Africa and accounts for 65% of new infections globally (James et al., 2018). HIV infections in sub-Saharan Africa disproportionately affect adolescents and young women (25% of new infections globally despite only representing 10% of the population), with 80% of new HIV infections amongst adolescents in the region occurring in girls between the ages of 15 and 19 years (Karim and Baxter, 2019). Women in sub-Saharan Africa bear the brunt of HIV in the region and are much more vulnerable than men due to various biological, behavioral, socioeconomic, cultural, and structural risks (Ramjee and Daniels, 2013). Stunting (a failure to grow in stature as a result of extended malnutrition) is common in sub-Saharan Africa, with a 36% prevalence rate (Watkins, 2016).

In relation to education, sub-Saharan Africa has an out-of-school rate of 18.8%, for children of primary school age, compared to the global rate of 8.2%, with females having a 5.1% higher rate than males in the region (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2019). Access to education is uneven for girls and boys due to factors such as violence, poverty, early marriage, and negative cultural values leading to high levels of illiteracy for girls (Ombati and Ombati, 2012). For those in school, the quality of education they receive in sub-Saharan Africa is impacted by insecure working conditions for teachers (including low job security, wages, and motivation) and the superficial and inadequate level of teacher training (Lauwerier and Akkari, 2015).

Climate change and global warming are also concerning factors impacting sub-Saharan Africa. The global north (USA, Canada, Europe, Israel, Australia, New Zealand, and Japan) is responsible for 92% of the excess CO_2 emissions and contribute 68% of the total proportion of CO_2 emissions (Hickel, 2020), whereas the global south is disproportionately harmed by its consequences through atmospheric colonization (Hickel, 2017). Extreme weather events caused by climate change and global warming result in disruptions to food security, water and sanitation, education, and health sectors (Codjoe et al., 2020).

Violence and, in particular, gender-based violence, continue to be prevalent in sub-Saharan Africa, with 41.0 to 45.6% of women experiencing intimate partner violence (IPV) and 14% experiencing non-IPV (Muluneh et al., 2020; McClintock and Dulak, 2021; Nabaggala et al., 2021). Sub-Saharan Africa has much higher rates of violent crime (13%) than other regions (4%) (Corcoran and Stark, 2018).

Despite the numerous challenges adolescents in sub-Saharan Africa face, there is evidence of resilience amongst sub-Saharan African adolescents who are able to mobilize available protective resources to buffer against hardship and unexpectedly (given severe adversity) thrive (Ebersöhn, 2017; van Breda and Theron, 2018).

2.2. Resilience, adolescence, and mental health

Within contexts of adversity rooted within historical legacies, adolescent resilience needs to be understood. Resilience constitutes processes to navigate resources that sustain wellbeing and negotiate access to these in contextually appropriate ways (Ungar, 2011). Understanding adolescent access to the "essential ingredients for resilience" (Ungar, 2008, p. 45), such as relationships, powerful identity, power and control, social justice, access to material needs, a sense of belonging, and a sense of culture and roots–will enable us to explore their impact on mental health outcomes. Resilience is therefore embedded within the context in which an individual exists first, followed by the quality of the individual (Ungar, 2011). In line with this, resilience is understood as being linked to the concept of risk exposure and one's ability to resist environmental risks or overcome adversity (Rutter, 2006). Here, risk exposure is not as important to consider as how individuals respond to or deal with these risks. Resilience is, therefore, not an individual trait but rather a complex interaction between the individual and their environment, which can change over time (Ungar, 2011).

Resilience, or an adolescent's ability to navigate to the resources that can sustain their wellbeing, is seen as an important buffer against the negative impact of the challenges adolescents are confronted with (van Breda and Theron, 2018), especially in low-and-middle-income countries where they experience structural disadvantages and adverse living conditions. Research in South Africa has shown that despite experiencing high-risk factors due to poverty, individuals continue to adapt to adversity and express wellbeing (Ebersöhn, 2017). In their critical review of South African child and youth resilience studies, van Breda and Theron (2018) identified four resilience-enabling pathways, namely, personal (e.g., agency and adaptive meaning-making), relational (e.g., affective support and opportunities for growth development), structural (e.g., financial wellbeing and community safety), and spiritual/cultural (e.g., spiritual beliefs and cultural values).

Resilience for adolescents in sub-Saharan Africa should be understood from an ecological perspective and is particularly embedded within reciprocal supportive collectives, linked to impactful figures that adolescents are connected to Theron (2019). Resilience within this context is less about the individual and more about the complex interplay between the individual and the multiple social systems in which they exist (Wessells, 2021). Indeed, calls have been made to view resilience as a broader concept within a social-ecological model to include individual, interpersonal, and community contributions to resilience and move away from a narrow focus on the psychological and limited interpersonal understandings of resilience (Dulin et al., 2018).

This paper was guided by an ecological systems theoretical framework (Bronfenbrenner, 1979) using a resilience lens. Within this framework, development and resilience are understood to be a result of continuous interactions between the individual and their environment (Bronfenbrenner, 1979; Ungar, 2011; Overton, 2013). Within the context element of the theory is the understanding that children develop within nested structures with different levels of impact on their development, namely, the microsystem, mesosystem, exosystem, macrosystem, and chronosystem (Bronfenbrenner, 1977). The focus solely on the individual has been shown as limiting, and evidence suggests the need for a more nuanced and relational understanding of development and resilience (Lerner, 2006). Positive developmental outcomes in adverse conditions result from complex relational interactions between the individual, family, school, community, friends, service available, mass media, and culture (Ungar, 2011). Relationality emphasizes reciprocal, bi- or multi-directional, or circular causality (Overton, 2013). As individuals and context change, so do the factors associated with positive outcomes.

Ebersöhn's (2012) proposed Relationship-Resourced Resilience echoes this by seeing resilience as a collective rather than an individual process whereby individuals with shared and persistent burdens connect (or flock) to access and share resources. Masten (2018) offers a scalable definition of resilience as "The capacity of a system to adapt successfully to significant challenges that threaten the function, viability, or development of the system." (p. 5). For this paper, a resilience lens has been used to understand resilience outcomes for adolescents with mental health (self-esteem, depression and feeling safe) as mediator in selected LMICs in SSA and to explore the relationship between the predictors (the socio-demographic variables) and the output (resilience), with the mediators being feeling safe, depression, and self-esteem (which all link to mental health). Relentless and cumulative adversities in the sub-Saharan context means that a resilience lens is useful contextually as it focuses on adaptive functioning at the high end of the continuum of risk or adversity (Lerner et al., 2019), and high-risk children and youth (Masten, 2014).

3. Materials and methods

3.1. Design

A cross-sectional comparative case study research design was employed. Comparative case study research seeks to enhance knowledge about society as a process by exploring the differences and similarities among large macrosocial units such as countries (Ragin, 2014). The study compared (across countries) the case of adolescent mental health of adolescents in low-middle-income countries within sub-Saharan Africa. The countries were selected based on the work done by a regional non-governmental organization called the Regional Psychosocial Support Initiative (REPSSI). REPSSI has worked in the Eastern and Southern African Region since 2002 and has established itself as the leading sub-Saharan African psychosocial support organization. REPSSI contributes to the growing body of evidence for psychosocial and mental wellbeing as a critical enabler of social, health and education outcomes for children, adolescents, and youth, provides evidence-based technical assistance and leads advocacy for sustained psychosocial support mainstreaming into social services, health and education programmes and services. It focuses on girls, boys, youth, families, and communities in SSA to ensure they live with hope, dignity, and happiness. REPSSI works across thirteen low-middle-income countries in SSA: Angola, Namibia, Zambia, Botswana, Kenya, Mozambique, Malawi, Zimbabwe, Lesotho, Tanzania, Eswatini, South Africa, and Uganda. REPSSI is implementing several psychosocial interventions for adolescents across all the countries where they have a presence. The first author works with REPSSI and oversees its research work. Countries, where REPSSI was implementing interventions and collecting data, were selected.

3.2. Sampling and sample

Purposive sampling was used in the present study, whereby a sample of adolescents involved in REPSSI interventions was invited to participate before the start of the intervention. An attempt was made to obtain data from 20% of adolescents participating in REPSSI interventions. In-country teams were asked to select a group of adolescents to collect data from, and once the target per country was reached, data collection was suspended for that group or country. Data were collected from 3,312 of the 15,979 adolescents who accessed REPSSI interventions, constituting a 21% coverage. The inclusion criteria for respondents were that they were part of REPSSI interventions, consented to be part of the present study, and were over 12 years of age. Respondents with unique characteristics such as gender (with the aim of an equal number of female and male respondents), location (with the aim of an equal number of respondents by intervention sites), and age (focusing on respondents between the ages of 12 and 20) were purposively selected. A total of 3,312 responses were collected across nine low-or-middle-income countries sub-Saharan Africa countries. The sample included 1,818 female respondents (55.0%) and 1,494 male respondents (45.0%). Data were collected from respondents in Angola (385, 11.6%), Eswatini (128, 3.9%), Kenya (390, 11.8%), Lesotho (349, 10.5%), Mozambique (478, 14.4%), Namibia (296, 8.9%), South Africa (771, 23.3%), Uganda (201, 6.1%), and Zambia (314, 9.5%). The ages of respondents ranged between 12 and 20, with a mean age of 14.58 years (SD = 1.82).

3.3. Data collection

Quantitative primary data were collected through a survey administered directly to respondents over the period of March and October 2020. REPSSI staff with experience in research processes in each country were trained in the tool and data collection processes. Data collectors with some experience in data collection and knowledge of mental health were recruited and trained in each country in line with the training guide. Given that data were collected from young people, younger data collectors were given preference. A training manual was created to standardize the training provided across countries and increase quality control. In addition, the REPSSI regional Monitoring and Evaluation officer provided ongoing support to each country during the training and data collection process. Training took place in person, although COVID-19 influenced how this happened by ensuring that all protocols were implemented to protect data collectors.

The questionnaire was translated into local languages by individuals with experience in translation who were fluent in both languages. The tools were translated into Portuguese (for Angola and Mozambique), Herero (for Namibia), and Swahili (for Eswatini). Given the limited resources, this process was limited to forward translations by single bilingual individuals. A limitation of this approach is that it may result in lower levels of reliability and validity of the data collected (Abubakar et al., 2013). The use of inter-item reliability tests and confirmatory factor analysis, which were undertaken for each scale, confirmed that despite the limitations of the translations, the psychometric characteristics of the scales were good (Swami and Barron, 2019).

Data collection was done close to the start of the implementation of the intervention in the country. Before the start of the interventions with adolescents, those for whom consent was obtained were contacted by the data collector to

arrange for data collection. Data were collected in person using tablets. Once all responses were collected, data were uploaded into a cloud-based server which used data encryption in transit, at rest, and on all backups. Only the first author had complete access to all the data, including identifying data. Confidentiality was maintained throughout all study procedures by storing locator information separately from respondent data. No identifying data were extracted from the database for analysis.

3.4. Measures

3.4.1. Demographic variables

Respondents' socio-demographic information collected included information on age (continuous variable), gender (binary variable: male, female), country (nominal variable: open-ended), school attendance (binary variable: yes, no), type of dwelling (nominal variable: house made of brick, house made of traditional materials, house made of steel sheets on its own plot, house made of steel sheets in a backyard, block of flats. a children's home or shelter, on the street, other), access to water and electricity at home (binary variable: yes, no), whether they are attending school (binary variable: yes, no), days hungry in the last week (continuous variable measured by framing the question as "how many days did you go to sleep hungry in the previous week?"), parental loss (two binary variables on being single or double orphaned: yes, no), family situation (two binary questions about looking after sick people or younger children at home: yes, no).

3.4.2. Resilience scales

The Child and Youth Resilience Measure-Revised (Jefferies et al., 2019) was used to measure the resources available to individuals that may bolster their resilience. The scale provides an overall resilience score, a caregiver resilience score (which includes items associated with relationships with either a primary caregiver of family), and a personal resilience score (which includes intrapersonal and interpersonal items), with the latter two linked as they depend on the social ecologies of the individual to reinforce resilience (Jefferies et al., 2019). The scale consists of 17 items which are rated on a 5-point Likert scale from *not at all* (1) to *a lot* (5). All 17 items were summed to compute a total index of resilience which yielded a Cronbach's alpha equal to 0.83. Ten items were summed to compute an index of personal resilience, which yielded a Cronbach's alpha equal to 0.74. Seven items were summed to compute an index of caregiver resilience which yielded a Cronbach's alpha equal to 0.71. The Child and Youth Resilience Measure (CYRM) was developed as part of the International Resilience Project at the Resilience Research Centre in 14 communities worldwide, including the Gambia, Tanzania, and South Africa (Ungar and Liebenberg, 2011). Our reliability analysis confirms the two-factor structure found by Jefferies et al. (2019), with 10 items belonging to the personal resilience scale and 7 items belonging to the caregiver resilience scale. The items and which scales they belong to are laid out in Table 5 of Jefferies et al. (2019).

3.4.3. Depression scale

The Patient Health Questionnaire-9 (PHQ-9) is a self-administered diagnostic screening tool for assessing and monitoring depression severity (Kroenke et al., 2001; Blackwell and McDermott, 2014). The PHQ-9 was developed based on the nine criteria upon which the diagnosis of depressive disorders in the Diagnostic Statistical Manual – IV (DSM-IV) is based (Kroenke et al., 2001). The scale consists of nine items rated on a 4-point Likert scale from *not at all* (1) to *nearly every day* (4). All items were summed to compute a total index of depression which yielded a Cronbach's alpha equal to 0.75. The PHQ-9 is useful, reliable, and valid in similar contexts too where we will use it, such as South Africa (Bhana et al., 2015; Aggarwal et al., 2017; Baron et al., 2017), Tanzania (Nolan et al., 2018; Smith Fawzi et al., 2019), Malawi (Udedi et al., 2019), Ghana (Anum et al., 2019), and Ethiopia (Gelaye et al., 2013).

3.4.4. Self-esteem scale

The Rosenberg Self-esteem Scale is a 10-item scale that measures global self-worth by measuring positive and negative feelings about the self (Rosenberg, 1965). Global self-worth is defined as one's overall sense of worthiness as a person (Rosenberg, 1965). The scale consists of ten items rated on a 5-point Likert scale from *not at all* (1) to *a lot* (5). All items were summed to compute a total index of self-esteem which yielded a Cronbach's alpha equal to 0.70. The "Rosenberg Self-esteem Scale" (Rosenberg, 2006, p. 61) has been administered to over 16,000 people in over 50 countries, including Botswana, South Africa, and Zimbabwe and found to be a useful measure of self-esteem with a Cronbach's alpha value above 0.70 in these countries (Schmitt and Allik, 2005).

3.4.5. Feelings of safety scale

In the questionnaire there was a self-developed section titled "feeling safe" which consisted of four ordinal Likert-scale items with response options "not at all," "a little," "somewhat," and "quite a bit" to statements "I feel safe at home," "I feel safe at school," "I feel safe in my community" and "I don't feel safe." As these were self-developed, the reliability of the scale was established as follows. For establishing reliability, Cronbach's alpha is the most widely used statistic; however, it is inappropriately applied to scales with few items as scales with few items are vulnerable to underestimation due to the property that Cronbach's alpha value increases as the number of items on the scale increases (Pallant, 2020; Robertson and Evans, 2020). The recommendation is that inter-item correlations are a more appropriate measure of scale reliability, with there being different recommendations ranging from 0.1 (Pallant, 2020) and 0.3 (Hajjar, 2018) or higher acceptable, with values between 0.2 and 0.4 being optimal (Robertson and Evans, 2020). After reverse-scoring the negatively phrased item "I don't feel safe," all correlations were statistically significant ($p < 0.001$) and fell within the recommended values. The p-values are omitted from **Table 1** as all $p < 0.001$, indicating all correlations are statistically significant. As expected, all correlations are positive, showing that feeling safe at home, at school and in my community, as significantly and positively correlation, however, also as expected, the item "I don't feel safe" is statistically significantly negatively associated with the other positively phrased items.

TABLE 1 Spearman correlations of feeling safe items.

Item	1.	2.	3.	4.
1. I feel safe at home	1.000	0.310	0.304	−0.135
2. I feel safe at school	0.310	1.000	0.427	−0.111
3. I feel safe in my community	0.304	0.427	1.000	−0.169
4. I don't feel safe	−0.135	−0.111	−0.169	1.000

3.5. Respondents' demographic characteristics

Almost all respondents (3,182, 96.1%) indicated they were in school. Earlier, in the literature review, we mentioned that SSA has an out-of-school rate of 18.8% for children of primary school age, meaning the in-school rate is 81.2%, whereas our results indicated that 96.1% of respondents indicated that they were in school. It should be noted that, in the projects that REPSSI are involved in, most of the access to children is done through schools; hence the high percentage reported of those in school. Of those that indicated that they were not in school (130, 3.9%), most said they were not in school because they did not have enough money (61, 46.9%), dropped out (28, 21.5%), got pregnant (13, 10.0%), or because they lost interest in school (11, 8.5%). Most respondents indicated that they lived in a house made of brick (1,274, 38.5%), followed by a house made of traditional materials (780, 23.6%), then a house made of steel sheets on its own plot (474, 14.3%), a block of flats (404, 12.2%), and a house made of steel sheets in a back yard (339, 10.2%). Almost none of the respondents reported living in a children's home or shelter (8, 0.2%) or on the street (5, 0.2%). Approximately half (1,546, 46.7%) of the respondents indicated that they had a tap with running water in their house, while just over two-thirds (2,284, 69.0%) indicated that they had electricity connected to their house. Approximately one-fifth (705, 21.3%) of respondents indicated that they went to sleep hungry one or more days in the past week, with 12.1% (400) saying that they went two or more days hungry in the last week. The mean number of days respondents went to bed hungry in the last week was 0.42 (SD = 0.98).

3.6. Data analysis

The primary analysis focused on the description of the resilience status of respondents and also explored between-country differences. Pearson's Chi-square test (χ^2), also known as a Chi-square test for independence or test of association, was used to determine whether there is a significant relationship between two categorical or nominal variables. Path and mediation analyses were conducted which allows one to examine the direct and indirect effects of one variable on another. They can help one understand the underlying mechanisms and pathways through which variables are related. Significance testing was undertaken using a 5% level of significance; thus, $p < 0.05$ indicates statistical significance. However, the use of p-values has received much criticism over the years (Nuzzo, 2014; Betensky, 2019), with one major criticism being its dependence on sample size (i.e., one might find a statistically significant result purely due to large sample size). Accordingly, researchers advocate for considering not only considering a low p-value but coupling it with an effect size (d) that is considered "medium" or "large" (Goodman et al., 2019; Halsey, 2019), as effect size is independent of the sample size. Thus, in the present study, only the results where $p < 0.05$ and d is moderate or higher, will be considered. Note that, d is typically used to denote the well-known effect size Cohen's d, which is associated with the parametric Student's t-test, and for the well-known t-test, $0.5 <= d < 0.8$ (medium) and $d >= 0.8$ (large). However, in the present study, d will be used to denote the effect size for all statistics considered with $0.3 <= d < 0.5$ (medium) and $d >= 0.5$ (large) being cut-off points for χ^2 tests (Kotrlik et al., 2011) and for any regression-type analysis (Nieminen, 2022) such as path and mediation analyses where the standardized regression coefficients represent the effect size. Thus, only results with $p < 0.05$ and $d >= 0.3$ will be reported on in the present study. STATA v14 was used for the descriptive and Chi-square statistics, whereas AMOS v28 was used for the path and mediation analyses.

3.7. Limitations

The current study employed a cross-sectional design, whereby data were collected from participants at a single point in time. Unlike longitudinal studies that track the same group of participants over an extended period, cross-sectional studies do not allow for establishing causal relationships. Therefore, the data collected in the current study does not provide direct support for causality. In the current study, the terms "direct effect" and "indirect effect" are used within the context of mediational analyses. It is important to note that these terms are not utilized to establish or imply causality. Rather, they are employed as standard language within mediational analyses to describe the relationships and pathways observed between variables.

Data were collected over the period of March and October 2020. By March 2020, since the World Health Organization (WHO) had declared COVID-19 a "Public Health Emergency of International Concern" on 30 January 2020 and a "pandemic" (p. 2) on 11 March 2020 (Lane et al., 2021, p. 2), all the countries considered in the current study already had introduced some policies and containment measures during (or before) the month of March 2020; details and timelines can be found at United Nations [UN] (2022) for Angolo, Nchanji and Lutomia (2021) for Eswatini, Lesotho, and Kenya, Lane et al. (2021) for Mozambique and Namibia, and Haider et al. (2020) for South Africa, Uganda and Zambia. As all countries were aware of the global public health emergency status and had implemented some level of response measures to address the pandemic's impact by the time of data collection, although we cannot measure how the COVID-19 pandemic restrictions may have impacted the adolescents' responses, the adolescents' experiences were captured in all nine counties under the shared knowledge and awareness of COVID-19's severity and implications.

The measure on feelings of safety was created by the team to assess how safe adolescents felt in different contexts and how their feelings of safety in different contexts correlate to wellbeing. This may have resulted in a very broad measure of safety. It may have

strengthened the research to use a specific scale to measure feelings of safety, such as the Neuroception of Psychological Safety Scale (NPSS) (Morton et al., 2022).

The study focuses on adolescents in SSA, which has unique social, economic, and environmental characteristics. The challenges and risk factors mentioned, such as poverty, inequality, climate change and global warming impacts, and high rates of violence (especially gender-based violence), are specific to this region. Therefore, the findings may not be applicable to adolescents in other regions or countries with different contextual factors.

4. Results

Due to the large number of countries and the vast number of variables considered in the present study, only the result results are reported on and considered in this section. As this was a cross-country analysis, first, differences between the countries are considered. When exploring differences between countries in overall resilience [$\chi^2(8) = 440.604$, $d = 0.365$, $p < 0.001$], personal resilience [$\chi^2(8) = 350.137$, $d = 0.325$, $p < 0.001$], and caregiver resilience [$\chi^2(8) = 379.851$, $d = 0.339$, $p < 0.001$] levels, significant differences were found. Angola had significantly lower overall resilience levels (*Mdn* = 61, *IQR* = 15) than all other countries. Lesotho respondents had significantly higher overall resilience levels (*Mdn* = 74, *IQR* = 12) than Angola (*Mdn* = 61, *IQR* = 15), Eswatini (*Mdn* = 65, *IQR* = 22.5), Mozambique (*Mdn* = 65, *IQR* = 12), Uganda (*Mdn* = 66, *IQR* = 15), and Kenya (*Mdn* = 72, *IQR* = 17). As with overall resilience, Angola had significantly lower personal resilience levels (*Mdn* = 35, *IQR* = 12) than all other countries. Respondents from Lesotho had significantly higher personal resilience levels (*Mdn* = 44, *IQR* = 9) than Angola (*Mdn* = 35, *IQR* = 12), Eswatini (*Mdn* = 39, *IQR* = 14), Mozambique (*Mdn* = 39, *IQR* = 8), Uganda (*Mdn* = 40, *IQR* = 9), South Africa (*Mdn* = 42, *IQR* = 8), and Kenya (*Mdn* = 42, *IQR* = 9). Regarding caregiver resilience, both Angola (*Mdn* = 27, *IQR* = 6) and Mozambique (*Mdn* = 27, *IQR* = 6) had significantly lower levels than Kenya (*Mdn* = 31, *IQR* = 9), Lesotho (*Mdn* = 31, *IQR* = 6), Namibia (*Mdn* = 31, *IQR* = 6), South Africa (*Mdn* = 31, *IQR* = 6), Zambia (*Mdn* = 31, *IQR* = 8), and Uganda (*Mdn* = 28, *IQR* = 7).

Mozambique had the highest proportion of respondents reporting that they had access to running water in their homes (80.5%), followed by South Africa (75.6%), Namibia (49.3%), and Zambia (40.1%), and these differences were significant [$\chi^2(8) = 902.893$, $d = 0.522$, $p < 0.001$]. Countries with the lowest proportion of respondents reporting that they had access to running water in their homes were Uganda (9%), Kenya (15.6%), and Lesotho (21.8%). Similarly, a significant difference was found between the proportion of respondents who had access to electricity in their homes across countries [$\chi^2(8) = 850.521$, $d = 0.507$, $p < 0.001$]. Again, almost all countries showed significant differences in home access to electricity, except between Angola and Eswatini, Angola and Kenya, Eswatini and Kenya, Lesotho and Zambia, Namibia and Zambia, and Lesotho and Namibia. Mozambique (98.3%) and South Africa (89.8%) had the highest proportion of respondents reporting electricity in their homes, with the lowest percentage being Uganda (11.4%).

A mediation analysis was conducted to investigate the relationship between the predictors (the socio-demographic variables) and the output (resilience), with the mediators being feeling safe, depression, and self-esteem (which all link to mental health). By examining the indirect effects of the socio-demographic variables on resilience through the mediators, mediation analysis provides insights into the extent to which feeling safe, self-esteem and depression (i.e., elements contributing to mental health) contribute to the relationship between these predictors and the ultimate outcome of resilience. Mediation analysis allows one to examine the direct and indirect effects of one variable on another. For the mediation analysis, when considering all countries collectively, the only significant results (when considering both direct and indirect effects) is that feeling safe has a significant direct effect on overall resilience ($\beta = 1.239$, $SE = 0.067$, $d = 0.343$, $p = 0.003$) and on personal resilience ($\beta = 0.758$, $SE = 0.043$, $d = 0.331$, $p = 0.005$). Note that β, SE, d and p refer to the regression coefficient, the standard error, the effect size and the p-values, respectively. Thus, the stronger the sense of feeling safe, the higher one's overall and personal resilience. Since "feeling safe" is the only variable that had a significant effect on resilience, and since the Chi-square test indicated that there are some differences between the countries, a path analysis was conducted for each country to explore the effect of feeling safe per country, as the effect of feeling safe on resilience wanted further exploration. It is interesting to note (see **Table 2**) that feeling safe has a direct effect on overall and personal resilience for all countries; however, for caregiver resilience, the direct effect is significant for all countries except for South Africa and Mozambique.

5. Discussion

We start the discussion by considering the results of the mediators (depression, self-esteem and feeling safe). In this sample, depression levels were found to be relatively low, with the mean score being 5.63 out of a possible range of between 0 and 27. Only 46 respondents (1.4%) had scores in the highest third range (above 18), 16.7% scored between 9 and 18, and the majority of respondents (81.9%) scored in the lowest third range (below 9). Suggested best cut-off points for detecting major depressive disorder using the PHQ-9 vary between 8 (Haddad et al., 2013; Urtasun et al., 2019) and 10 (Kiely and Butterworth, 2015; Costantini et al., 2021). Prevalence rates of depression within the present study's sample were 15% using a cut-off of 10 or 23% using a cut-off of 8. Available literature on prevalence of depression is limited in that the regional coverage is highly variable, and methodological issues (varying definitions, non-generalizable sample sizes, and a lack of standard indicators) prevent amalgamation across countries (Baxter et al., 2013). Available literature on prevalence of depression among adolescents in sub-Saharan Africa varies between 9.3 and 21.8% (Cortina et al., 2012; Nalugya-Sserunjogi et al., 2016; Aggarwal et al., 2017; Ajaero et al., 2018; Kyohangirwe et al., 2020; Quarshie et al., 2020). Given the prevalence rates of depression among adolescents in sub-Saharan Africa found by other studies, a more conservative cut-off of 10 for depression may be more suitable for this sample. The present study's prevalence rate of 15.0% for depression concurs with that in existing literature, namely, of depression prevalence rates of between 9.0 and 22.0% amongst adolescents in sub-Saharan Africa. The relatively low depression

TABLE 2 Result of path analysis.

Country (*n*, %)	Resilience	β	*SE*	*d*	*p*	Significant
Angola (385, 11.6%)	Overall	1.871	0.144	0.577	0.006	Yes
	Personal	1.137	0.104	0.497	0.005	Yes
	Caregiver	0.734	0.068	0.503	0.005	Yes
Eswatini (128, 3.9%)	Overall	2.342	0.414	0.503	0.007	Yes
	Personal	1.247	0.245	0.469	0.006	Yes
	Caregiver	1.094	0.195	0.490	0.007	Yes
Kenya (390, 11.8%)	Overall	3.279	0.266	0.590	0.003	Yes
	Personal	1.655	0.143	0.541	0.004	Yes
	Caregiver	1.624	0.142	0.566	0.002	Yes
Lesotho (349, 10.5%)	Overall	1.655	0.204	0.436	0.004	Yes
	Personal	0.996	0.136	0.408	0.003	Yes
	Caregiver	0.659	0.103	0.350	0.002	Yes
Mozambique (478, 14.4%)	Overall	1.101	0.118	0.402	0.003	Yes
	Personal	0.722	0.085	0.395	0.004	Yes
	Caregiver	0.378	0.055	0.282	0.005	No
Namibia (296, 8.9%)	Overall	1.445	0.211	0.453	0.006	Yes
	Personal	0.873	0.128	0.441	0.005	Yes
	Caregiver	0.572	0.093	0.399	0.005	Yes
South Africa (771, 23.3%)	Overall	0.930	0.113	0.313	0.003	Yes
	Personal	0.640	0.078	0.311	0.004	Yes
	Caregiver	0.290	0.057	0.203	0.003	No
Uganda (201, 6.1%)	Overall	1.432	0.351	0.476	0.007	Yes
	Personal	0.803	0.216	0.437	0.005	Yes
	Caregiver	0.629	0.152	0.403	0.004	Yes
Zambia (314, 9.5%)	Overall	2.009	0.229	0.452	0.003	Yes
	Personal	1.234	0.148	0.448	0.003	Yes
	Caregiver	0.775	0.128	0.343	0.003	Yes

prevalence rate amongst this sample may indicate that adolescents in SSA are managing to cope with their contextual challenges and that these may not be impacting their levels of depression. On the other hand, an argument could be made that 15 out of 100 adolescents having depression in a non-clinical sample is of concern and should be addressed. Further research could explore how depression presents itself within this sample and ensure that the existing definitions and diagnoses of depression are culturally and contextually sensitive. In addition, further research could explore other ways in which adolescents' mental health in SSA may be affected (beyond depression). Interventions for adolescents in SSA could focus on how to increase access to protective factors against depression. Furthermore, interventions could ensure that those that do present with depression receive appropriate differentiated interventions specific to their mental health challenges.

Self-esteem levels of respondents could be described as moderate to good, with the mean score being 29.4 out of a possible range of between 10 and 40. Only 11 respondents (0.8%) scored in the lower third range (below 20), while 64.2% scored between 21 and 30, and 35.0% scored in the highest third range (above 30). Using the median of 25 to dichotomize the scores (of the possible range for the scale), for the present study, 13.6% would be categorized as having low self-esteem (below 25) while 86.4% would be categorized as having high self-esteem (above 25). Researchers have reported divergent results in relation to self-esteem, with high levels of self-esteem found in 90.9% of university medical students in Nigeria (Egwurugwu et al., 2017), 50.9% of young people living with HIV in rural South Africa (Filiatreau et al., 2020), 42.9% of 12 to 24-year-olds living in rural South Africa (Filiatreau et al., 2021), 39.7% of 10 to 14-year-old primary school children in Uganda (Kemigisha et al., 2018), and 13% (32% moderate) of university students in Nigeria (Coker et al., 2019). The present study found a much higher proportion of adolescents with high levels of self-esteem (86.4%) than existing literature (with the exception of the Nigeria study with medical students), which may be linked to differences in the samples. Comparatively high levels of self-esteem may be indicative of the particular sample (i) having sufficient protective resources that support the positive development of adolescent self-esteem, or (ii) the risk factors that

constrain the development of positive self-esteem development are limited. Further research exploring notions of the "self," how adolescents in sub-Saharan Africa feel about their own self-worth, and how this differs from existing literature and knowledge of self-esteem would be valuable.

For safety, the possible score ranges from 0 to 16 (as there were four questions with response options coded 0 to 4) with the mean being 10.87. Almost a third of respondents (29.3%) scored in the lower third range (10 or lower), while almost half (48.1%) scored between 10 and 12, and 22.6% scored in the highest third range (12 or higher). The fact that a higher percentage is in the lower third range than the higher third range shows feelings of feeling unsafe. Many studies have linked feeling unsafe to mental health problems (Mori et al., 2021; Fossum et al., 2023) and this is why the variable relating to feelings of safety was selected as a mediating variable. The results showed that the safer you feel, the higher your resilience (overall and personal for all countries) and caregiver (for all countries except two). In addition, feeling safe was the only variable to have a direct effect on resilience out of the three mediating variables, namely, depression, self-esteem and feeling safety.

Now turning to socio-demographic variables, in the current study, gender did not have a significant direct or indirect effect on resilience. Existing literature on gender differences in relation to resilience is mixed in that some have found higher levels of resilience in females (Sun and Stewart, 2007; Newsome et al., 2016), and others found higher levels of resilience in males (Boardman et al., 2008; Erdogan et al., 2015; Fallon et al., 2020; Yalcin-Siedentopf et al., 2021). Despite these differences in literature, the common factor is that existing literature seems to point to there being a gendered dimension to resilience. However, in contrast to existing knowledge on the gendered nature of resilience, in the present study, gender did not have a significant direct or indirect effect on overall, personal, or caregiver resilience. Of interest is that a study in a similar context (Malawi and South Africa) but with children younger than those in the current study (Macedo et al., 2018) also found no gender differences in relation to levels of resilience. The absence of gender differences in resilience, self-esteem, or depression within the present study may indicate that adolescent girls and boys are similar in terms of their access to resilience-enabling resources and their levels of depression and self-esteem. From a research perspective, a more detailed exploration of how female and male adolescents may differ in their presentation of depression, their notions of self-esteem, and their resilience may be required. For practitioners, interventions that focus on adolescents' access to resilience-enabling resources, reduce depression, or enhance self-esteem may not require gender-specific content.

When turning to the predictors, it was interesting to note that there were no direct or indirect significant effects between the predictors (socio-economic variables) with the three mental health mediators (depression, self-esteem and safety) and the output (resilience). These results seem to be in contrast with some literature but also in agreement with findings from other literature. Take age, for example. Some research has found that being younger was associated with lower levels of depression (Thapar et al., 2012; Gardner and Lambert, 2019; Khesht-Masjedi et al., 2019). On the other hand, the results of the present study, particularly there being no significant direct effect between age and self-esteem, concur with other existing research which has found that self-esteem levels remain stable during adolescence (Orth et al., 2018) and decrease in older adolescents and increase from adolescence to middle adulthood (Trzesniewski et al., 2013; Orth and Robins, 2014). On the other hand, Gardner and Lambert (2019) have found that older adolescents had lower levels of self-esteem, which contradicts the present study, which found that levels of self-esteem did not differ significantly depending on age. Of course, there were many other socio-economic variables that, for the current study, were shown to have no significant direct or indirect effect on mental health outcomes and resilience, which concurs and contradicts many findings in the literature, therefore, studies such as these are valuable in exploring relationships such as these.

5.1. Enabling resilience of adolescents in sub-Saharan Africa

The current comparative study contributes to the literature on the links between mental health (mediator) and resilience (outcome) for adolescents in sub-Saharan Africa. The paper contributes to the existing literature by outlining the centrality of crafting safe spaces in which adolescents may live as they navigate resilience.

At a **macrosystems** level, efforts to address the numerous challenges adolescents in sub-Saharan Africa experience, such as poverty, inequality, educational shortcomings, health crises, and violence, need to be enhanced. In addition, our results associating being in school with better levels of resilience and mental health provide support for the need for sub-Saharan Africa to critically address the high rate of out-of-school population and the low education participation rate (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2019). Given the potential protective resources schools are in moderating the negative impact of poverty (Ashley-Cooper et al., 2019) and positive mental health outcomes (Aldridge and McChesney, 2018), ensuring that children are in school and remain in school could be a priority for sub-Saharan Africa. Access to mental health services for adolescents needs to be improved in sub-Saharan Africa; access to mental health services is severely limited for adolescents who require in-patient treatment in sub-Saharan Africa as the availability of such services is decreasing and scarce (Owen et al., 2016; Dlamini and Shongwe, 2019). At the same time, the scarcity of mental health services in sub-Saharan Africa makes research into the socio-ecological pathways to better mental health outcomes, such as the present study, important.

At an **exosystem level**, efforts need to be made to ensure that children and adolescents have sufficient access to nutritious food and are not affected by hunger. Positive adolescent development and mental health rely on adolescents' ability to access nutritious food, and it is the responsibility of families, communities, and governments to provide such access. The present study contributes to existing knowledge in supporting the link between feeling safe in communities and mental health outcomes (Traoré et al., 2020; Pearson et al., 2021). Creating opportunities for adolescents to feel safe within their broader environment can therefore enhance their mental health outcomes and be resilience-enabling

(Reich et al., 2017). In fact, the results suggest that feeling safe is a key factor in adolescent mental health and resilience.

At a **mesosystem level**, feeling safe at school and at home was associated with higher levels of resilience, lower levels of depression, and higher levels of self-esteem. Safety and protection of adolescents need to be prioritized in sub-Saharan Africa. Schools can provide access to resilience-promoting resources (Ebersöhn et al., 2015; Jefferies and Theron, 2017), which improve outcomes for adolescents (Ungar et al., 2019), including improved wellbeing and better mental health outcomes (Moore et al., 2018). Schools can be places to address resilience in contextually relevant ways, pre-empt risks, and advocate for systemic changes that enhance adolescent wellbeing (Theron, 2016). The present study indicates that fostering positive, caring relationships between adolescents and their peers could be a useful strategy to protect adolescents against poor mental health outcomes.

As adolescents move from early to late adolescence, peer relationships increasingly influence their behavior (De Goede, 2009), and therefore these relationships could be a focus of interventions to protect adolescents' mental health. However, peer interactions are also found to increase risk-taking (Knoll et al., 2015) and problem behaviors (Dishion and Tipsord, 2011) in adolescents, Therefore, enhancing positive peer relationships could be a key intervention strategy in terms of influencing better mental health outcomes for adolescents. Developing adolescents' skills to create and maintain positive, encouraging, supportive, trusting, and connected friendships amongst each other could enhance their mental health outcomes (Woods-Jaeger et al., 2020; Cutuli et al., 2021). The present study confirms that peer support can be protective against depression (Roach, 2018) for adolescents in sub-Saharan Africa. The importance of positive relationships as protective resources for adolescents supports Ebersöhn's (2012) proposed Relationship-Resourced Resilience concept, which highlights the collective rather than the individual process of resilience and the potential to leverage flocking as a mechanism to access and share resources.

At a **microsystem level**, adolescents who experience parental loss are in particular need of interventions that support them and enhance their access to resilience-enabling resources. The present study adds to existing literature which indicates that parental loss impacts resilience (Onkari and Itagi, 2019; Walsh, 2019), especially for adolescents (Kennedy et al., 2018). Ensuring that adolescents who have experienced parental loss are in line for additional support and services is warranted. Looking after younger children or sick people at home was found to be protective against poor mental health outcomes for adolescents in the present study, which contradicts existing literature (Cree, 2003; Cluver et al., 2012; De Roos et al., 2017). A more in-depth exploration of the associations between being a young career and mental health outcomes for adolescents in sub-Saharan Africa is recommended. The function of being a young career as a protective relational mechanism (Ebersöhn, 2012; Ungar, 2012) within sub-Saharan Africa could be explored further.

At an **individual level**, older adolescents seem to require additional attention in terms of their mental health. As adolescents age, their access to protective resources may be diminished during a time in which they could actually be enhanced. Their developmental need for independence and the search for peer and sexual or intimate relationships (Zani and Cicognani, 2020) may invertedly reduce their access to the protection offered by caregivers and school and increase their risk of poor mental health outcomes. Caregiver emotional engagement and support for autonomy can influence sexual agency for adolescents and support the development of positive intimate relationships (Klein et al., 2018). Interventions which encourage the continued, but developmentally appropriate involvement of caregivers and schools in supporting adolescents would be beneficial for adolescents in sub-Saharan Africa.

Finally, the **chronosystem** also needs to be considered, whereby the socio-historical context, the events adolescents experience at different ages, what age they are, the relationships they have access to, and the decisions they make within these contexts (Bronfenbrenner and Morris, 2007) influence both their feelings of safety and their access to resources that could enhance safety and therefore resilience.

The results of the present study indicate the necessity to foreground youth development intervention focus on collaboration across socio-ecological systems with the aim to create spaces where adolescents may experience feeling safe. We have argued that the Sub-Saharan African context compromises potential to "feel safe" as challenged systems interact. At macrosystem level poverty, inequality, educational limitations, health crises, and violence predict high instances of everyday crime, abuse and violence. The exosystem is characterized by constraints to everyday opportunities to experience safety in the community, as is the case on the mesosystem within schools, homes and amongst acquaintances. At the microsystem level the potential to feel unsafe is exacerbated by high prevalence of parental loss and demands on adolescents to act as caregivers to others in a household.

The present study supports existing research which highlights the interaction between individual, relational, and contextual resources to have a relationship with outcomes (Liebenberg, 2020). Focusing only on the individual is insufficient within this context and broader approaches across various socio-ecological systems would be more effective. This is especially important for adolescents who experience rapid developmental changes (Gibbs, 2019) and are at an increased risk for social-emotional disorders (Rapee et al., 2019). The present study provides further evidence of the socio-ecological understanding of resilience as embedded within the availability of resilience-enabling resources within their ecologies and adolescents' ability to navigate their way to these resources in meaningful ways (Ungar, 2008, Ungar, 2011).

Youth development intervention strategies may benefit from leveraging socio-cultural and contextual practices that enable adolescents to feel safe. In this regard intervention strategies may include partnerships with adolescents at community-level to establish conditions in which adolescents feel safe such as street-committees to identify unsafe spaces, physical after-school leisure spaces (Baldwin, 2011), mapping systemic role-players (guardians, peers, police, mentors) who establish and maintain such spaces of safety (Levy et al., 2020), involving adolescents in the process of creating safe spaces (Chomat et al., 2019; van der Westhuizen et al., 2023) and deliberating how to resource and support new initiatives,

and/or maintain existing mechanisms that enable feelings of safety amongst adolescents.

6. Conclusion

Given the scarcity of available literature on how mental health outcomes of adolescents in sub-Saharan Africa (the mediators) could be enhanced, this cross-country comparison adds valuable insight into the similarities and differences across the regions. The study found that feeling safe was the only variable to have a significant direct effect on resilience and that none of the indirect effects were significant. This comparative study supports the need to utilize a contextually informed approach to understanding resilience (Höltge et al., 2021) and addressing adolescent mental health needs (Ssewamala and Bahar, 2022) in SSA. The comparative differences found across countries in the present study further support the concept that resilience is context-specific (Herrman et al., 2011), requiring an understanding of the locally available cultural resources and individual thoughts, feelings, and behaviors of adolescents (Ungar and Theron, 2020). Different countries will require different approaches to enhancing access to resilience-enabling resources for better mental health outcomes for adolescents. Interventions could tap into existing collective psychosocial support practices to address the needs of adolescents within SSA communities (Ebersöhn et al., 2018). Further research is indicated to understand the country-level difference between Mozambique and South Africa, and other participating countries with regard to the direct effect of caregiver resilience and feeling safe.

7. Recommendations for future research

As the current study included a self-developed safety scale, the reliability of which was established, additional research could be conducted on the use of this safety scale or on other aspects of safety, such as psychological safety. In psychologically secure environments, individuals experience a sense of acceptance and worth, leading to increased trust, collaboration, and open communication. The Polyvagal Theory (PVT), which provides a comprehensive explanation of psychological safety based on evidence from neurophysiology, psychology, and evolutionary theory (Porges, 2011), could be utilized in such a study. PVT has been used to inform the development of safety scales, such as Morton et al.'s (2022) NPSS. As trauma and resilience are two interrelated concepts that pertain to an individual's response and coping mechanisms in the face of adversity, future research could concentrate on gaining a comprehensive comprehension of psychological safety and its relevance in the context of trauma. A study of this nature should strive to include a diverse and representative sample of individuals, including those who have and have not experienced trauma. This will enable a broader understanding of the effects of psychological stability in trauma-related settings.

Data availability statement

The datasets presented in this article are not readily available because data was collected from minors with consent for use by REPSSI-affiliated researchers only. Requests to access the datasets should be directed to monica.bandeira@repssi.org.

Ethics statement

The studies involving humans were approved by the University of Pretoria, Faculty of Education, Ethics Committee. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin.

Author contributions

MB conducted the analyses and led a first draft of the manuscript. LE and MG assisted with conceptualizing the study focus and contribution to the knowledgebase, interpreting the study results, and collaborated in drafting and revising the manuscript. All authors read and approved the final manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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Enabling structural resilience of street-involved children and youth in Kenya: reintegration outcomes and the Flourishing Community model

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Introduction: Millions of children and youth live on city streets across the globe, vulnerable to substance use, abuse, material and structural neglect. Structural resilience, the re-establishment of access to structural goods within a society such as housing, education, and healthcare following some interruption, provides an orientation for research and interventional efforts with street-involved children and youth (SICY). Further, a structural resilience framework supports organizing interactions between levels and sectors of a socio-ecology.

Methods: Following the expressed interests of Kenyan SICY, and consistent with emerging policy interests at national and global levels, we assess reintegration trajectories of Kenyan SICY (n = 227) participating in a new program intervention and model. The intervention combines two coordinated, parallel programs – one focused on the rescue, rehabilitation, reintegration and resocialization of SICY, and the other focused on empowering families and communities to provide better care for children and youth who are reintegrating from life on the streets to the broader community. Data were collected and analyzed from multiple stages across SICY involvement with the intervention.

Results: We found 79% of SICY participants reintegrated with the broader community, and 50% reintegrated with families of origin and returned to school. Twenty-five percent of participants reintegrated to a boarding school, polytechnical school, or began a business. Probability of reintegrating successfully was significantly improved among participants whose families participated in the family- and community-oriented program, who were younger, with less street-exposure, expressed more personal interests, and desired to reintegrate with family.

Discussion: To our knowledge, these are the first quantitative data published of successful reintegration of SICY to the broader, non-institutionalized community in any low- or middle-income country. Future research should (1) identify

factors across socio-ecological levels and sectors contributing to health and developmental outcomes of reintegrated children and youth, (2) mechanisms to support SICY for whom the interventional strategy did not work, (3) methods to prevent street-migration by children and youth, and (4) system development to coordinate follow-up and relevant investment by institutions, organizations and community leaders to continue reintegration work.

KEYWORDS

street-involved children and youth, resilience, socio-ecological frameworks, reintegration, Kenya

1. Background

1.1. Overview of challenges facing street-involved children and youth

The United Nations Children's Fund has previously published estimates that tens of millions of children live on city streets globally, separated from adult caregivers (UNICEF, 2005). A notoriously difficult population to enumerate, street-involved children and youth (SICY) are vulnerable to multiple forms of abuse on the streets, human trafficking, substance misuse, and failure to thrive (Mathur et al., 2009; Nada and El Daw, 2010; Malindi and MacHenjedze, 2012; Pullum et al., 2012; Embleton et al., 2013; Aransiola and Zarowsky, 2014).

Published estimates of the number of Kenyan SICY range from 46,639 to 300,000 (Sorber et al., 2014; Street Families Rehabilitation Trust Fund, 2018). The study producing the lower estimate, released by the Kenyan Ministry of Labour and Social Protection in 2018, faced multiple limitations undermining its reliability – such as distrust between enumerators and children, budget over-runs due to the need for increased security, language barriers between interviewers and children, and criminal cartels who interfered with the underfunded study (Street Families Rehabilitation Trust Fund, 2018). The higher estimate is regularly cited as authoritative in peer-reviewed literature; however, it was released as a report from a news agency in 2007, citing the estimates of experts without peer-reviewed analysis or methodological transparency (IRIN, 2007).

1.2. The Socio-ecological context of street-involved children and youth in sub-Saharan Africa

The phenomenon of children living on the street is a multi-level problem, understood best through Bronfenbrenner's socio-ecological model. **Figure 1** displays a non-exhaustive compilation of known factors associated with street-migration among children. Across time (chronosystem), industrialization and dominant global economic development models contribute to urbanization (Patil, 2014). According to United Nations data, the percentage of population living in urban areas in Eastern Africa increased fourfold between 1950 and 2020 – equal to the growth in Kenya (United Nations, Department of Economic and Social Affairs, Population Division [UNDESAPD], 2018). Across sub-Saharan Africa, including in Kenya, urbanization followed railways placed by colonizing European country governments – a trajectory that continued after railways became less utilized (Jedwab and Moradi, 2016; Jedwab et al., 2017a). At the beginning of the 20th century, sub-Saharan Africa contained only about 50 cities with 10,000 or more inhabitants. By 2010, the number of cities with at least 10,000 inhabitants grew to almost 3,000 (Jedwab et al., 2017b).

The emergence of cities, new economic opportunities and political economies influence macro-, exo-, meso-, and micro-systems impacting risk of street migration among children. One example of the impact urbanization and new migration routes have on communities and families is the early geographic spread of HIV – which followed economic routes created by colonizing forces (Faria et al., 2014). While it is difficult to trace the numerical rise of SICY across colonizer-induced dynamics, urbanization is a necessary element for children to sleep on city streets. Further exacerbating disruptive inequities due to forced participation in the globalized economy, the structural adjustment programs inspired by the Washington Consensus and championed by the great powers in the late 1980s exacerbated the relative standing of rural communities, women and children with respect to health outcomes, income, education, and social cohesion (Ahmed and Lipton, 1997; Craig and Porter, 2005; Thomson et al., 2017; Forster et al., 2020).

1.3. Policy environment related to interventions with street-involved children and youth

There is a dire need for evidence-informed programmatic and policy interventions to support the wellbeing and self-determination of SICY. In 2010, the United Nations General Assembly adopted a resolution calling for member states to shift from placement of children in long-term care facilities toward reintegration of separated children (United Nations General Assembly [UNGA], 2010). In 2012, the United Nations High Commissioner for Human Rights published a report on "the protection and promotion of the rights of children working and/or living on the street." The report recognized governments as primary duty-bearers to meet the obligation of having the rights of children respected and fulfilled. The UN High Commission report required

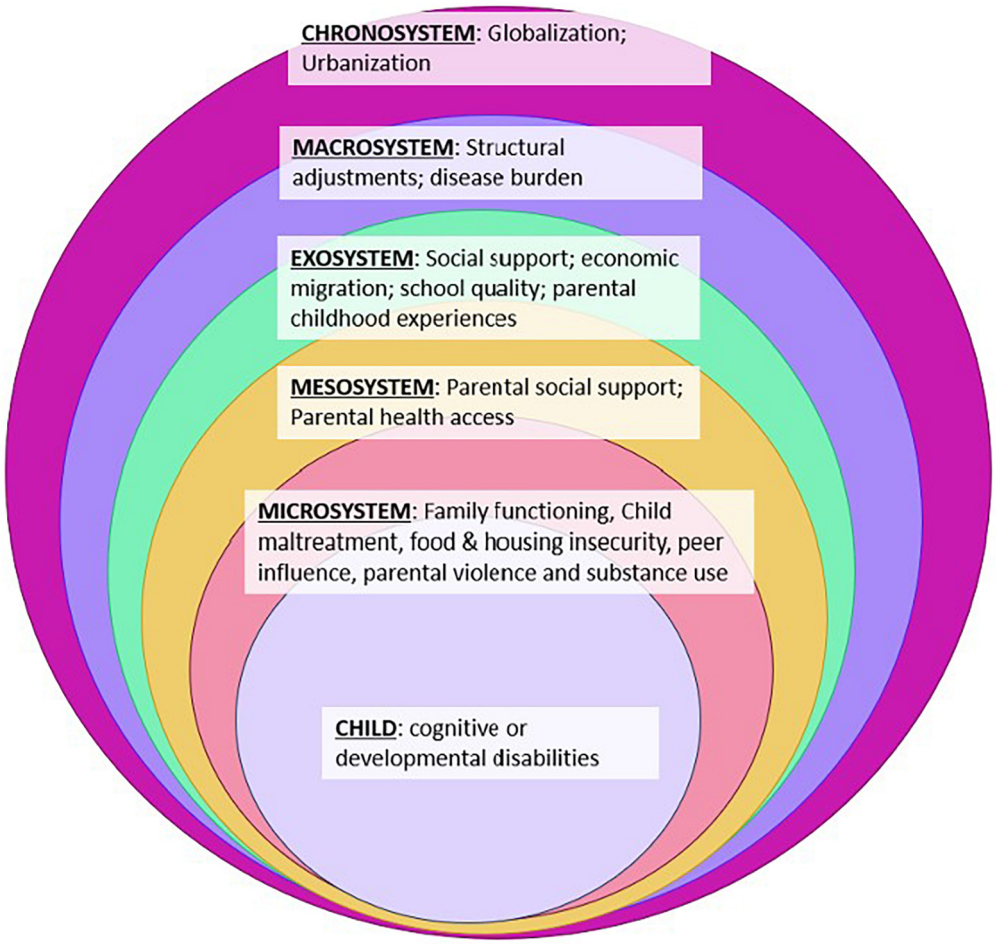

FIGURE 1
Non-exhaustive socio-ecological factors influencing street-migration of children.

States to present legislation to mandate municipal policies and resource-coordinated interventions for SICY (Office of the High Commissioner for Human Rights [OHCHR], 2012). The United Nations Convention on the Rights of the Child issued a general comment in 2017 aiming to provide comprehensive, authoritative guidance to States toward a holistic, rights-based approach to prevent street-migration of children and ensure a continuum of care for SICY to develop their fullest potential (UN Committee on the Rights of the Child, 2017).

Kenya is one of many low- and middle-income countries working to address the social and health challenges confronting SICY. In 2022, the national government of Kenya released its National Care Reform Strategy for Children endorsing reforms to (1) prevent family separation and promote family strengthening, (2) support alternative care and transition away from institutional care, and (3) trace, reintegrate and transition to family- and community-based care (Kenya Ministry of Labour and Social Protection, 2022). Kenya's national plan for care reform includes efforts to defund institutionalization of children, a plan that is supported by good evidence (e.g., Lionetti et al., 2015; Lyneham and Facchini, 2019). However, due to the paucity of evidence, neither the UN resolution nor the Kenya Care Reform strategy provides evidence to support the perspective that SICY can be successfully reintegrated with families of origin or foster families. A 2016 global review of literature presenting interventional effectiveness of programs designed to reintegrate SICY found no studies measuring inclusion and reintegration of SICY anywhere in the world, and no studies exploring interventional outcomes of programs in low- or middle-income countries (Coren et al., 2016). Evidence-informed strategies are required to ensure that children living on the streets are not simply placed back in abusive or unstable families they fled when they initially migrated to the streets.

1.4. Study interventional context

A team of public health researchers, community leaders and social workers, our own work with SICY began in 2012 in response to local concerns about the growing number of children who were migrating to the streets of Meru County, Kenya (Seidel et al., 2017, 2018). **Figure 2** illustrates the heterogeneity of households reporting street-migration of children between communities within three sub-counties in Meru County, stratified by HIV-status. Statistically significant variation in probability of reporting a child lives on the street differs by HIV-status of adults in the household and village location (Goodman et al., 2016). Mixed methods research reveals multiple community- and family-level predictors of street-migration – including maternal childhood adversities,

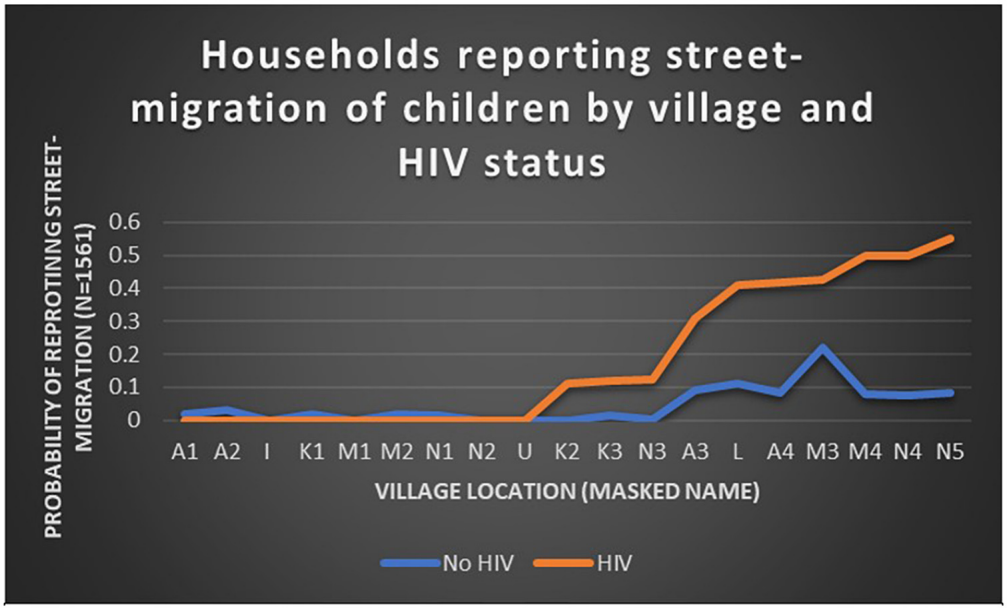

FIGURE 2
Variation in street-migration by village and parental HIV status within three Kenyan sub-counties. Data from Goodman et al. (2017).

maternal years of schooling, family cohesion, financial resources, parental mental health, substance use, and maternal social support (Goodman et al., 2017). Learning disabilities appear at higher rates among street-involved children than within the broader population, indicating child-level differences that may contribute to street-migration risk (Ward and Seager, 2010).

1.4.1. Risk of stigma from non-contextualized interventions

Despite the complex socioecology of street-migration among children, many SICY experience high rates of stigma related to life on the streets (Rivenbark et al., 2018; Gayapersad et al., 2020). Often interventions to assist vulnerable children and promote child resilience are not adequately informed by a socio-ecological model and may risk reinforcing an individualistic view of children's resilience capacities (van Breda and Theron, 2018). An individualistic focus is particularly unhelpful, and blames the victims who are children facing enormous socio-ecological challenges. Other interventions with stigmatized populations report that an individualistic-focus places the blame and responsibility for one's stigmatized condition on individuals and thereby reinforces the stigmatized label (Täuber et al., 2018). Therefore, we sought to develop a socioecological model to support the reintegration of SICY, pursuant to their expressed desires and consistent with current Kenyan policy.

1.5. Study interventional design

Interventions must operate within their available scope of influence; within the communities of Meru County, Kenya, our intervention aims to address modifiable constructs and factors at two levels of the ecological model: (1) the children identified as living on the street and (2) the families of these children (Goodman et al., 2020). Through iterative action-reflection cycles, we developed a "4R + P" model to support children living on streets of three sub-counties in Meru County, Kenya – Rescue, Rehabilitation, Reintegration, Resocialization, and Prevention (**Table 1**). Program goals are to: (1) help interested SICY find their way off city streets (Rescue); (2)help rehabilitate SICY by providing a nurturing environment to detoxify from substance use, anti-social street behaviors, and reconnect with family, community mentors, and schools (Rehabilitation); (3) connect former SICY with their families of origin whenever possible and support these families to provide continuous on-going nurturing (Reintegration); (4) help children and youth form new identities that support their future roles as community members and leaders through caring for crops, animals, gaining marketable skills and re-initiating school attendance (Resocialization); and (5) strengthen families and communities to prevent the migration of children to the street and ensure children have secure and nurturing environments within which to grow and develop (Prevention).

1.5.1. Introducing the Watoto wa Ahadi Rescue Center

Our strategy to support the rescue, rehabilitation and resocialization of SICY is called the "Watoto wa Ahadi Rescue Center" or "Children of Promise Rescue Center." The program has gained the shortened name "ARC." The ARC is based on 79-acres owned by the Methodist Church of Kenya and has been developed to include housing for 50 children at one time, staff dormitories, kitchen and dining hall, remedial school building, community meeting place, farm animals and crops – including a kitchen garden. Recruitment to the ARC initially began with the expectation that SICY would spend up to 2 years in the center, in part to provide the program time to develop the community-based program (KPJ, more below) within local area communities and SICY's communities of origin, and in part because there were no data to guide the intervention planning process. It became clear that some children and youth were ready to reintegrate sooner,

TABLE 1 4R + P model for working with street-involved children and youth.

Rescue	Rehabilitation	Reintegration	Resocialization	Prevention
Build rapport with children living on the streets	Provide temporary secure shelter, stimulation and support for child	Transfer child and care to identified family member when possible	Utilize practical skills of self-care, care for animals and crops	Increase social, economic, health, and educational resources at village-level
Identify children interested in leaving life on the streets	Cease use of substances, and learn coping and prosocial skills through group and individual counseling	Transfer child to boarding school or polytechnic school if necessary	Demonstrate school readiness and attend nearby school	Cultivate nurturing "flourishing" communities to support member families and children
Work with District Children's Office to secure approval to assume care for child	Form new role/social identity as "child of promise"	Provide on-going follow-up to identify and rectify challenges	Re-develop connections with family members when possible	

and provisional support for reintegrating children and youth was thus developed through the community-based element described below. These shifts also coincided with early COVID-19 policy in Kenya that precluded gatherings of more than 10 individuals, thus forcing the program to reintegrate youth more rapidly than before. Currently, some youth are directly reintegrated (spending little to no time at the ARC) if program social workers assess them to be less integrated with street-life and their families to have some capacity to care for them.

1.5.2. Introducing the Flourishing Community model and the KPJ program

Our strategy to reintegrate former SICY, and prevent their migration to the street, requires community engagement. Since 2017, we have been iteratively designing and testing features of the model we now call "Flourishing Communities" (Goodman et al., 2022a). Beginning with the home village of a child identified as living on the street, this program has grown to over 39 villages with over 10,000 weekly participating families (as of December 2022). While the overall model, intended to be generalizable beyond its specific context, is called Flourishing Communities, the program that continues to give rise and clarity to the Flourishing Community model is called "Kuja Pamoja kwa Jamii" (*KPJ*; Swahili for "Come Together for the place where we belong"). An adaptation and expansion of group-based microlending and communal governance approaches, more has been published on the KPJ design, organization and practices (Goodman et al., 2021a) and proposed psychosocial mechanisms (Goodman et al., 2022a).

1.5.2.1. Distinctions and similarities between flourishing and resilience

The terminology "flourishing" was selected deliberately to underscore that while the communities that participate in the program face various challenges from multiple sources, levels, and histories, it is their potential and opportunities for growth that define the program staff's relationship with them (Goodman et al., 2022a). While resilience is a process in response to adversity, flourishing is a process in response to opportunity. As communities experience both adversity and opportunity, resilient and flourishing processes overlap in lived experience as well as theoretical underpinnings. Yet, the ways in which outsiders frame and engage with communities influences communal self-perceptions and should be carefully considered (Muhammad et al., 2015). We anticipate that self-understandings that prioritize opportunities rather than adversities are more likely to support empowerment and respect human dignity. Definitions of resilience have included both an orientation toward adversity and new found opportunities, but we believe calling the latter definition "flourishing" clarifies this tension and places this work within other broad literature on psychosocial and economic dynamics of human flourishing (Shaw, 2012; VanderWeele, 2017). The Flourishing Community model is represented to program participants through use of the tree (**Figure 3**), and seeks to enhance structural resilience.

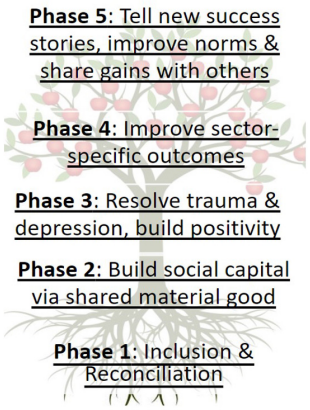

FIGURE 3
Flourishing Community model.

1.5.2.2. Structural resilience

Resilience has been defined many different ways – ranging from intra-individual traits, states, or processes to adaptability of communities or organizations (Pooley and Cohen, 2010). This study approaches resilience as a structural process within a socio-ecology; there are certain socio-ecological positions that must be addressed and resolved before questions of individual-level resilience are posed ethically. At the center of this study is an investigation of "structural resilience" – what enables the possibility of changed structural relations for children and youth living in city streets of Meru County, Kenya. The construct of structural resilience describes the interacting and mutually supporting legal, economic, social, and political structures within a society that ensure equitable access to quality housing, education, and healthcare to promote people's individual and collected self-determination (adapted from Panter-Brick, 2014). Structural resilience has appeared in scholarly literature occasionally over the

TABLE 2 Measures reflecting Flourishing Community model, baseline (T1) vs. follow-up (T2) among KPJ participants, Meru County, Kenya.

		T1		T2		
	N	Mean	SD	Mean	SD	*p*-Value
Global sense of belonging[t]	60	59.6	−9.1	63.2	−7.9	<0.01
HIV-related stigma*	88	15.4	−5	12.7	−5	<0.001
Monthly household income (USD)	229	29	−30.4	36	−42.2	<0.01
Collective efficacy*	184	5.8	−0.8	6	−0.7	<0.001
Compassion	133	23.4	−2.1	23.9	−1.7	<0.05
Depression	223	0.46	−0.47	0.34	−0.34	<0.001
Spirituality*	118	6.4	−0.68	6.6	−0.63	0.01
Harsh child punishment, past month	229	28.30%	−0.5	19.60%	−0.4	<0.01

Participants (T1) who reported highest values of compassion, spirituality, or collective efficacy and lowest level of HIV-related stigma were removed from the bivariate analysis shown here. Variables are ordered to depict the logic model of the 5-phases of Flourishing Community scaffolding: (1) build belonging/inclusion – here, global sense of belonging, (2) build economic and social resources simultaneously – here, income and collective efficacy, (3) improve mental health and psychological – here, compassion, depression, and spirituality, (4) improve sector specific outcomes – here, parenting; and (5) normative and enduring improvement (not shown). Data from multiple studies currently under peer-review. Asterisk indicates variables where highest or lowest T1 values were removed from analysis to deal with ceiling or floor effects.
[t]Global sense of belonging data come from an adaptation of program to families with HIV, thus comprising a smaller subset of participants.

past decade, but remains conceptually and operationally underutilized (Southwick et al., 2014; Manjula and Srivastava, 2022). Within the policy shift toward reintegrating SICY, and children in institutional settings, the concept of structural resilience provides a framework to consider the socio-ecological factors that contribute to sustained reintegration and resocialization of SICY and primary prevention of their street-migration.

1.5.3. The 5-phase scaffolding approach to Flourishing Community

To support the structural resilience of SICY, we developed a two-pronged approach within the overall umbrella we call the "Flourishing Community" model. Programmatically, one prong focuses directly with children who are living in street contexts (the ARC program), and the other prong focuses on families and communities from which these children migrate (the KPJ program).

As displayed in **Figure 3**, the Flourishing Community model begins with inclusion and reconciliation (Phase 1). Inclusion may refer to inclusion of former SICY, their families, others who do not experience inclusion or require reconciliation with other program members. As roots draw resources into the tree, included and reconciled members of Flourishing Communities bring assets to the community and permit connection. The next phase (Phase 2) involves the establishment of lending groups who convene weekly to exchange $0.20–$0.50 with other members, and thereby generate social capital – expectations of reciprocity, trust, and shared capacity to improve their lives together (c.f. Goodman et al., 2021a,b, 2022b,c). As the trunk supports the structure of the tree, increased economic and social resources support the growth and structure of Flourishing Communities.

The social capital accrued through weekly microfinance participation enables members to address sources of on-going trauma, reduce depression, and build psychological assets like meaning in life, spirituality, curiosity, compassion, and self-compassion (Phase 3) (cf. Goodman et al., 2021b). To support this psychological development, we have created and are testing a novel positive psychology-based curriculum ("Pathways to Flourishing"), integrating insights from interpersonal theories of depression, psychological flexibility, and positive psychology (Kashdan and Rottenberg, 2010; Fredrickson, 2013; Hames et al., 2013; Seligman, 2018). As the xylem in trees carry water and dissolved minerals up from the roots of a tree to the leaves and fruit, positive psychological resources permit individuals and communities to "broaden and build" engagements and cultivate new opportunities and resources (Fredrickson, 2013).

Enhanced economic, social, and psychological resources permit communities to advocate for, and collaborate on, community resources and development across sectors and domains (Phase 4). In practice, this takes the appearance of advocating for and securing new water wells, school buildings, housing support, farming skills, HIV testing, peer support to reduce intimate partner violence, and other areas. The model presents an opportunity to consider how the Sustainable Development Goals may be integrated at the community level (cf. Stafford-Smith et al., 2017). As branches lead from the trunk of a tree in different directions and produce leaves to metabolize energy from the sun and flowers to recruit bees and promote pollination, organized, organic and empowered growth within Flourishing Communities can lead to improvements across multiple domains and support liaising with external resources.

Sustainable community growth and development leaves lasting benefits to future generations and inspires further community-led change within one's own and in other communities (Phase 5). As fruit indicates the growth of healthy trees and carries seeds to develop other trees and their own fruit, the results of Flourishing Communities improvements across sectors and domains will result in lasting benefits and will inspire other communities. For more extensive discussion of the social psychology and facets of community development of the Flourishing Community model, (please see Goodman et al., 2022a).

Examples of measures reflecting the phases of the Flourishing Community model are presented in **Table 2**. These data are from on-going program evaluation to understand and inform processes by which the KPJ intervention may impact participants. While we have not yet assessed the interventional model through a randomized control trial, longitudinal data demonstrate evidence of effectiveness for the Flourishing Community model. Global sense of belonging, household monthly income, collective efficacy,

compassion, depression, spirituality, HIV-related stigma and harsh child punishment all improve from the baseline (T1) occurring 1-year prior to the follow-up (T2) among active participants. The KPJ program has sufficient enrollment to permit multiple concurrent studies and exploration of measures (see **Table 2** data).

1.6. The current study

This study analyzes exit data from the ARC program to inform probability of "successful" reintegration of former SICY. Outcomes were created following the 4R approach – sustainably rescued and rehabilitated from living on the streets (i.e., the child did not abandon the program early or return to the streets after leaving the program), resocialized (i.e., demonstrates ability to be sustained in an academic- or work-oriented program), and reintegrated (i.e., engaged in suitable activities to promote the child or youth's continued growth and development in an extended fashion).

1.6.1. Study data context

The ARC program initiated programmatic intervention in April 2016, and its model has evolved since. An open question programmatically, and relevant to the policy enthusiasm for closing long-term charitable child institutions, is how long a child or youth should remain in a transition or rehabilitation facility. The program initially began with a 2-year time horizon for a cohort of children, owing in part to strategic development of the KPJ program envisioned during the second year. Experience operating the program clarified that each case is different, with some children and youth able to return to their home environments much sooner than other children and youth. Alternatively, some SICY are able to be reintegrated directly while spending no time, or only a few days, at the ARC program. The degree to which time duration spent at a transitional facility predicts SICY's reintegration with families of origin, school attendance, or recidivism to street life has not to our knowledge been reported.

The duration of time a child or youth spends on the streets influences the degree to which that person is socialized into the norms, attitudes and behaviors of street-life. For example, children who spend more time sleeping on the streets are at greater risk of substance use (Goodman et al., 2023). Overall, global prevalence estimates indicate 60% of SICY utilize some form of substance while on the street (Embleton et al., 2013). The degree to which duration on the streets or substance use patterns on the street impact reintegration prospects within sub-Saharan Africa has not been previously reported.

Children and youth face enormous adversity on city streets – encountering economic, emotional, physical and sexual abuse in addition to the social and material deprivations (Mathur et al., 2009). A previous study from Burundi found the number of traumatic life events and violent experiences during the previous 3-months predicted the number of classes attended by SICY at an institutional care facility (Crombach et al., 2014). The degree to which abuse experienced on the streets, which often compounds maltreatment experienced previous to living on the streets, influences prospects of SICY reintegration beyond institutional care facilities has also not been previously reported.

Crombach et al. (2014) found post-traumatic stress disorder mediated associations between previous traumatic experiences and class attendance at an institutional care facility in Burundi. Cultivating interests in activities and hobbies is recognized as a resilience-promoting practice, though it is unclear the extent to which this process may be mediated by the promotion of grit, self-esteem, self-efficacy, positive social identity, autonomy, self-regulation, or some other psychological trait (Gilligan, 1999; Howell, 2011). The degree to which SICY interests in activities on the street predict future reintegration prospects have not been reported within sub-Saharan Africa.

Finally, the KPJ/Flourishing Community model was developed to support families and communities from which SICY had left to live on streets. While the program shares features with other programs, we are unaware of any program integrating economic, social, health, and educational elements as does the KPJ program with the intention to support the reintegration of SICY (Goodman et al., 2020). Whether family participation in the KPJ, or similar, program is associated with reintegration prospects has not been reported within sub-Saharan Africa or other low- or middle-income contexts.

1.7. Study aim

This study aims to characterize post-interventional reintegration outcomes, and significant predictors, from multiple waves of SICY participants in the ARC program. Reintegration outcomes report structural location after exiting the ARC program. Assessed predictors reflect pre-street, street-, and post-street-life characteristics of the child, family, and community.

1.7.1. Implied sub-aim

While the primary focus of this study is on immediate reintegration outcomes and significant predictors from the ARC program, we also evaluate whether participation in the KPJ program is associated with improved reintegration outcomes as intended. **Figure 4** depicts theoretical relationships between two programs, an umbrella interventional model and the socio-ecological framework of structural resilience. An implied sub-aim of this study moves beyond immediate reintegration outcomes of SICY to assess validity of the hypothesized synergy between SICY-focused activities (the ARC program) and the community-based program to support families and communities of origin for SICY (the KPJ program). As depicted in **Figure 4**, these two programs, and the Flourishing Community model they inform, seek to improve structural resilience within a socio-ecological framework. This study is intended to lend support or nuance to this strategy.

2. Materials and methods

2.1. Study design

This is a retrospective cohort study, utilizing program data related to participants in the ARC program from multiple data

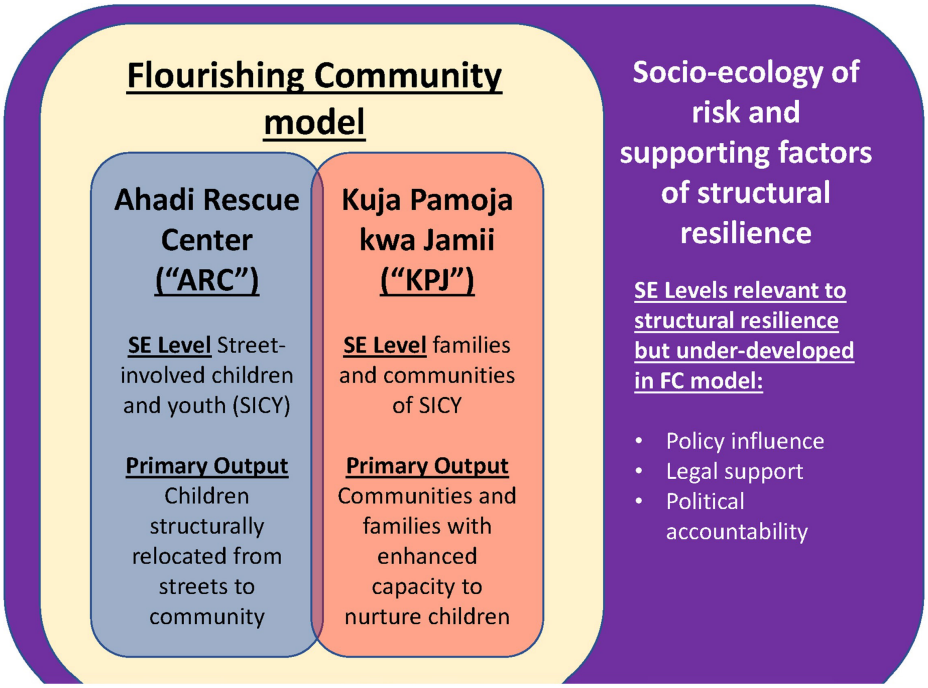

FIGURE 4
Socio-ecological levels of structural resilience risk and promoting factors for SICY within the Flourishing Community interventional model. SE level, socio-ecological level; FC, Flourishing Community model.

sources. The study is set in Meru County, Kenya, using data from April 2016 through October 2022.

2.2. Data source

All data analyzed in this study were collected from program involvement with children and youth identified living on streets in three sub-counties of Meru County, Kenya between April 2016 and October 2022. Four forms were integrated into one dataset for present analyses – child intake, exit, follow-up and initial household interview. All available data from the program were digitized, and linked at the individual-level. The combined file was then deidentified to support statistical analysis.

Intake data were available for 253 instances. Of these, 25 were repeated from the same child who had relapsed to the streets following a previous intervention. The repeated observations were omitted from this study, utilizing just the first engagement and the child considered a "relapse case." This left unique intake data from 227 children – 226 boys and 1 girl.

Of the 227 unique children, an initial household interview was conducted with families from 201 children. Sometimes it is not possible to identify a member of a child's family because the child is a total orphan, or the parents have completely abandoned the child and moved without identifiable family.

Of the 227 unique children, 6 children lived at the ARC during the data digitalization and were omitted from the final analysis due to unknown outcome from the intervention.

Of the 221 unique children who had left the intervention, follow-up records were available for 127. Program staff report various characteristics influence the extent to which they are able to follow-up with previous program participants. Children who are in more secure environments are less likely to be followed up due to resource limitations, and children who live in more migratory environments are harder to be followed up due to falling out of contact.

2.2.1. Intake form

Trained, paid social workers conduct routine walks through town streets in the catchment area, identifying children and youth who have moved to the streets and developing rapport. During recruitment periods, which occur when school is in session to identify young people who should be in school but are instead on local streets, social workers identify young people who report sleeping on local streets and express an interest in reintegrating with the broader community. During this period, SICY who report an interest in leaving street life are interviewed using a semi-structured questionnaire.

2.2.1.1. Intake data overview

Street-involved children and youth provide information on their home village and family background, age, years on the street, motivation for migrating to the street, years in school completed, interest in activities (including sports, socializing, cooking/cleaning, and others), chores at home before moving to the streets, activities engaged in during life on the street, source of food, forms of abuse experienced on the street, general health, substances used on the street and desired outcome of engaging with the program. The date the child moved to the ARC, or was directly reintegrated, is included with the analysis. As each child is at the

ARC under permission from a family member or member of the government, the intake form provides information about whether the child has identifiable family or not.

2.2.1.1.1. Time of entrance to the program

Data reflect a series of cohorts through the ARC program, and the evolving, more personalized timing of coordinating activities around the need of each child rather than a standard preset duration of time (reported in section "Results").

2.2.1.1.2. Family background data

Street-involved children and youth provide information related to their family backgrounds, including whether their parents are living, deceased or unknown; who their primary guardian was at home; and how many living siblings they have.

2.2.2. Initial household interview form

After securing temporary approval from the Child Protection Office to assume care for a child identified living on the street, social workers attempt to identify the family of the child who was brought into care at the Watoto Wa Ahadi Rescue Center – or directly reintegrated, if possible. When possible, family data are recorded and verified if previously provided by the child.

2.2.2.1. Initial household interview data overview

Social workers engage with village chiefs and neighbors to identify families of origin reported by SICY. Whenever possible, social workers rely on the closest family available to provide information about the identified child. The data recorded by social workers include food and housing quantity and quality (good, fair, and poor), family challenge areas (including substance use, housing insecurity, relational stability, food or water security, and foster family), occupation and health of the parent, and whether the family owns land.

2.2.3. Exit form

After working with the child and family to develop a reintegration plan, whenever possible, and staying at the ARC for long enough to meet remedial goals of reintegration, the child or youth is reintegrated with their home community or another option beyond the ARC (e.g., polytechnic school or financial support to start a business).

2.2.3.1. Exit form data

Data regarding the child's time at the ARC, including date and destination upon leaving the ARC are recorded on an exit form for each child. Services offered to the child, duration of time at the ARC, school participation, and whether the child's family joined the KPJ program during his tenure at the ARC is recorded.

2.2.4. Follow-up data

Upon reintegrating a child or youth with their destination post-ARC intervention, social workers rotate visitations with children and youth previously served by the organization and attempt to offer on-going counseling and referrals as necessary and possible to the children and their caregivers. This activity provides an opportunity to revise understandings of where the child is currently engaged – including if the child has returned to living on the streets. The date on the follow-up form provides an indication of how long the child persisted in the outcome documented on the exit form, though only cases where the child had relapsed were noted as different to the exit form data. Follow-up data were included to control for potential loss-to-follow-up confounding, and to inform follow-up-oriented resource utilization and strategy.

2.3. Analysis plan

This study is principally concerned with the placement of children after participating in the ARC intervention and predictors of the positive outcome of being reintegrated with a family and enrolled in school.

2.3.1. Outcome variable

There were originally five potential outcomes of the program: (1) enrolled in school and living at home; (2) enrolled in school but not at home – e.g., boarding school; (3) enrolled in a polytechnical school to gain a skill or otherwise supported to start a business; (4) returned to the streets – either by running away from the program before finishing, or relapsing to the street after a reintegration attempt; and (5) still living at the ARC at the time of data digitization. To support multinomial logistic regression, these five outcomes were reduced to three – (1) with family and enrolled in school; (2) enrolled in boarding or polytechnical school, or supported to start a business, and (3) relapsed to the streets or fled the program prior to completion. Children who remained at the ARC at the time of data digitalization were excluded from analyses, as their outcome was not yet known.

2.3.2. Predictor variables

The four data sources – intake form, exit form, follow-up form, and initial household interview – provided data that may be significantly associated with the defined outcome variable. These four sources provided information about different time points across the intervention's relation to the child, and the child's own history. These data were sorted into four different subsets for analysis according to theorized proximity to the outcome. Each subset was analyzed separately to identify variables that were significantly associated with the outcome before assessing retained variables in sequence from more distal to more proximal relation to the outcome. Statistically, it would not be possible to distinguish confounding, suppressing or mediating relations between variables, and there is insufficient theory and evidence to suggest probable pathways (MacKinnon et al., 2000).

2.3.2.1. Four subsets of data

To support assessment of a large set of variables within an exploratory evaluation, we grouped data into groups based on timing and proximity of these variables to the outcome. The rationale for this approach was that more proximal variables may explain (mediate) associations between more distal variables and interventional outcome. Rather than ignore the potentially significantly associated distal variables,

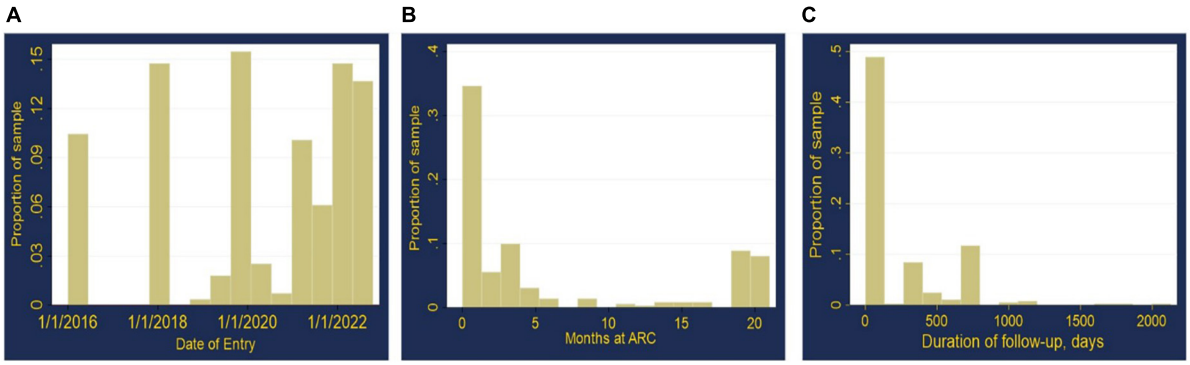

FIGURE 5
(A–C) Data of entry to ARC, months spent at ARC, and duration of follow-up among intervention subjects.

we included them in initial models before determining the final model.

2.3.2.1.1. Home environment and background

Home environment and background data included: child's current age; sub-location before migrating to the street; guardian status; child's activities at home; years of school completed before migrating to the streets; child's dislikes at home; health, and economic status of household; and whether any family member could provide consent for the child to spend time at the ARC center.

2.3.2.1.2. Reported experience on the streets

Data reported by the child, and recorded on the intake form, relevant to the child's time on the street were grouped and analyzed together, including: time on the streets, forms of abuse reported on the street, age when the child first migrated to the streets, interests and behaviors on the street, manner of securing food, sleep location, and substance use behaviors.

2.3.2.1.3. Interventional characteristics – ARC

Characteristics of participating in the ARC program were assessed – including time spent in the program, date entering the program, child's goals for life after the intervention, and duration of follow-up post-intervention. Duration of follow-up and date entering the program were sub-divided into five quantiles to facilitate interpretation.

2.3.2.1.4. Interventional characteristic – KPJ

Kuja Pamoja kwa Jamii participation was included as a binary measure – the child has a family member enrolled in the KPJ program vs. the child does not/it is unknown.

2.3.3. Modeling strategy

The outcome variable is described using proportion for each possible outcome – first with the five potential outcomes, and then as reduced to three outcomes. Multinomial logistic models were calculated to identify variables associated with moving back with a member of the family and attending school, compared to the other two options – enrolling in polytechnical school, boarding school, or starting a business; or returning to live on the streets during or after the ARC intervention.

Descriptive statistics are reported for all variables that were significantly associated with the multinomial outcome variable – for each subset of data, and for the final model. Variables within each subset of data were assessed simultaneously through multinomial logistic regression and were retained in the model for that specific data subset if they were significant at $p < 0.20$; the alpha threshold for this study was 0.05.

The final multinomial logistic regression model was created by including all variables significantly associated with the outcome for each of the four subsets of data and all retained variables that were significantly associated with either of the two outcome comparisons at $p < 0.05$.

2.3.4. Ethical consideration

Initial data collection for the project was given ethical approval by the Children's Office of Meru County, Kenya, with consent provided by proxy for care of each participating child until family contact could be established by the program. Each child provided assent to participate in the program, including data that is recorded at each phase of the project. Data were linked by program facilitators prior to being deidentified for used by researchers. The Institutional Review Board at the University of Texas Medical Branch provided ethical exemption for the analysis of secondary, deidentified program data.

2.3.5. Data analysis software

All data were analyzed in STATA v.16.1 (StataCorp, 2019).

3. Results

3.1. Visualizing program exposures

Figures 5A–C show (A) dates of enrollment, (B) months spent at ARC, and (C) duration of follow-up for all included children. Figure 5A demonstrates the increase in number of SICY supported through the program as the program transitioned from longer stay to shorter stay around January 2020. Figure 5B demonstrates the number of months children and youth have stayed at the ARC, with the largest number of SICY staying for less than 5 months. Figure 5C demonstrates the length of follow-up for each child.

3.2. Descriptive outcomes of sample

Table 3 displays variables included in the outcomes or associated with the outcomes in analysis of a limited or full regression models. Over 50% of children who previously lived on the streets were reintegrated with their families and returned to school, with an additional 8% placed in boarding schools, 14% placed in polytechnical schools, and under 3% starting a business. Nearly 13% of participants left the program early, and nearly 10% were known to have relapsed to the streets at least once after being reintegrated to the broader community. As shown in Figure 6, there were a total of 253 initial records, of which 25 were repeated engagements with the same children. Of the 227 SICY who were rescued from the streets at one point, 29 left the program early and returned to life on the streets. Of the 197 SICY who were rehabilitated and reintegrated to some other location, 17 subsequently relapsed to the streets, leaving 180 (of the original 227) who were reintegrated with follow-up.

3.2.1. Comparison of variables across outcome strata

As shown in Table 3, the average child was 13 years old, and younger children were significantly more likely to be reintegrated with their families than another outcome. The average years of completed schooling was 4.9; age was not significantly different across outcome categories. Over 30% of children had families who owned land, which was 50% lower among children who relapsed or left the program early compared to children who were reintegrated to families of origin or another location. Over 1 in 5 children had family who could not be identified when they entered the program – arriving under government consent. Children who were reintegrated with a polytechnical or boarding school had the lowest percentage of children without identifiable family at intake. The mean years on the street (1.6 years; SD: 2) was significantly lower among children who were reintegrated with their families of origin than children who were in the other two outcome categories.

Over 35% of children reported being emotionally abused on the street, and over 25% of children reported being economically abused on the street. Reported experiences of emotional or economic abuse were significantly lower among children who left the program early or relapsed to the street. Among children who were reintegrated, experiences of abuse were lower among children who were reintegrated to their families of origin. The index of reported interests was significantly higher among children who reintegrated to their families of origin compared to children who relapsed or left the program early. Children who were reintegrated to families directly entered the program significantly later, on average, than children who were reintegrated to boarding or polytechnic schools or who began a business. Nearly 1 in 3 children reported at intake their goal was to reintegrate with their families, and this percentage was significantly higher among children who were reintegrated with their families or who returned to the streets. Over 50% of children were reported as without follow-up post-intervention, which was 23% higher among children who returned to the streets (67%) compared to children who were reintegrated with their families (45%). Among those who received reported follow-up visits by a social worker, the duration of follow-up was highest for children who were reintegrated to a boarding or polytechnical school. Only 12% of children had families who had joined the KPJ program, and this was highest among children who were reintegrated with their families (18%) and lowest among children who returned to the streets (2%).

3.3. Comparing outcomes across subsets of data

Table 4 shows the multinomial analyses of 4 data subsets.

3.3.1. Families of origin and outcomes

The first subset shows older children were significantly more likely to be in Outcome B (reintegrate to boarding school, polytechnic school, or start a business) or Outcome C (return to streets) compared to Outcome A (reintegrate with family and return to school). Children without identifiable families at intake were more likely to be in Outcome B compared to reintegrated with their families of origin, before controlling for variables in other data subsets.

3.3.2. Street experiences and outcomes

The second data subset assesses variables related to street experiences. Children who reported more years on the street had significantly higher rates of reintegrating someplace other than with their families of origin. Reporting emotional or economic abuse on the streets predicted significantly higher rates (2.99 and 2.62, respectively) of reintegrating some place other than families of origin. Children who reported more interests at intake were significantly less likely to return to the streets later.

3.3.3. ARC program exposure and outcomes

The third data subset showed children who entered the program at a later date were more likely to reintegrate with their families of origin than children who reintegrated to a polytechnical school, boarding school, or start a business. Children who returned to the streets spent less time on average at the ARC and had less desire to reintegrate with their families of origin.

3.3.4. KPJ program exposure and outcomes

The fourth analysis revealed that children who returned to the streets were significantly less like to have families who were in the KPJ program. Children who returned some place other than with their families of origin were also less likely to have families in the KPJ program, but this was not statistically significant.

3.4. Final model of outcomes

Table 5 shows the combined, final multinomial logistic model comparing Outcome A (reintegrating to families of origin and attending school) to Outcome B (reintegrating some place other than with families of origin) or Outcome C (returning to the streets).

Controlling for other factors, older children were significantly less likely to be reintegrated with their families of origin. Children who were on the street longer were less likely to reintegrate with their families of origin ($p < 0.1$). Children who reported

TABLE 3 Univariate and bivariate description of model variables.

		Univariate			Outcome A		Outcome B		Outcome C		*p*-Value
		N	Mean (%)	SD	Mean (%)	SD	Mean (%)	SD	Mean (%)	SD	
Outcome A	Reintegrate with family and return to school	226	51.0%	0.4							
Outcome B: reintegrate someplace other than home	Boarding school	226	8.0%	0.3							
	Polytechnical school	226	14.1%	0.3							
	Start business	226	2.7%	0.2							
Outcome C: return to street	Leave program early	226	12.8%	0.3							
	Relapse	226	8.8%	0.3							
Censored from analysis	Still at ARC	226	3.0%	0.2							
Subset 1	Age	218	13	2.1	12.53	2.12	13.89	1.89	13.54	2.10	<0.001$^{\Delta}$
	Years of school	194	4.9	2.2	4.83	2.08	5	2.29	4.70	2.56	0.75$^{\Delta}$
	Family owns land	219	31%	0.46	35.04%	0.48	33.93%	0.48	17.39%	0.38	0.07$^{\varepsilon}$
	No identifiable family at intake	219	21%	0.41	26.50%	0.44	7.14%	0.26	26.09%	0.44	0.006$^{\varepsilon}$
Subset 2	Years on street	179	1.6	2	0.92	1.34	2.83	2.25	1.55	2.16	<0.001$^{\Delta}$
	Street abuse, emotional	219	37%	0.48	32.48%	0.47	51.79%	0.50	28.26%	0.46	0.02$^{\Omega}$
	Street abuse, economic	219	28%	0.45	23.08%	0.42	46.43%	0.50	17.39%	0.38	0.001$^{\varepsilon}$
	Interest index (range: 0–3)	187	1.2	1.2	1.37	1.31	1.24	1.11	0.82	1.19	0.007$^{\Delta}$
Subset 3	Entry date to ARC (*q5*)	218	2.8	1.4	3.08	1.40	1.69	0.88	3.41	1.33	<0.001$^{\Delta}$
	Months spent at ARC	193	7.7	8.2	6.49	7.94	13.39	7.94	3.71	5.09	<0.001$^{\Delta}$
	Child desires to reintegrate with family	219	29%	0.45	37.61%	0.49	16.07%	0.37	21.74%	0.42	0.007$^{\Omega}$
	No follow-up	219	52%	0.5	44.8%	0.50	50.0%	0.50	67.4%	0.47	0.04$^{\Omega}$
	Follow-up duration$^{\Psi}$	107	530	358.4	509	282	652	489	395	318	0.23$^{\Delta}$
Subset 4	Family joined KPJ	219	12%	0.33	17.95%	0.39	8.93%	0.29	2.17%	0.15	0.01$^{\varepsilon}$

Sample mean or percentage and standard deviation provided for model variables. Specific outcomes combined to create Outcomes A, B, and C presented. *p*-Value for different bivariate tests of independence provided.

$^{\Delta}$Kruskal–Wallis test.

$^{\Omega}$Chi-square.

$^{\varepsilon}$Fisher's exact.

$^{\Psi}$Follow-up duration includes only cases with any reported follow-up, and is reported in days between program exit and last reported follow-up contact.

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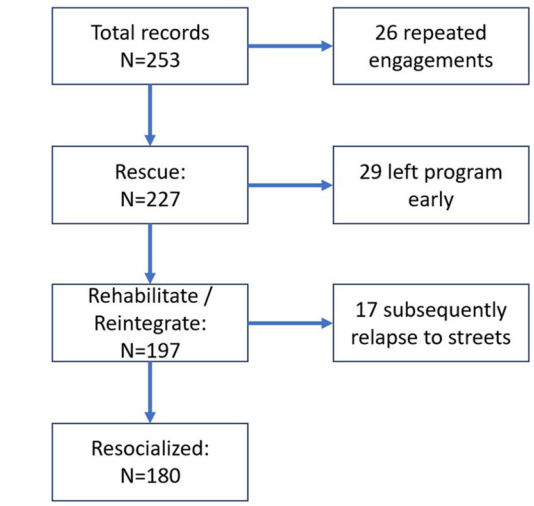

FIGURE 6
Structural interventional outcomes.

experiences of emotional or economic abuse on the street were more likely to reintegrate someplace other than their families of origin. For each interest on the interest index reported by a child at intake, the rate of reintegrating to someplace other than families of origin were nearly doubled, and rates of returning to the streets reduced by 30% ($p < 0.08$). Children who entered the program at a later period were significantly more likely to be reintegrated with their families of origin than to another location. Children who expressed a desire to reintegrate with their families of origin at intake were significantly more likely to be reintegrated with their families of origin subsequently. Children whose families were in the KPJ program had significantly lower rates of returning to the streets, controlling for other factors. Children who were in the program longer had higher rates of reintegrating with their families of origin. Children who were reintegrated with their families had significantly higher rates of follow-up than children who were reintegrated some other place or returned to the streets.

4. Discussion

Through this analysis of program data, we intended to understand positive outcomes from a program intervention that embraces a socio-ecological perspective of children and youth living in street situations. Furthermore, we aimed to animate, inform and encourage application of structural resilience-oriented research and interventional work.

4.1. Program findings

As data showed, the program underwent an evolution in its practice around the time of COVID-19, and in part as a response to government shutdowns to control the pandemic. As such, the number of children who passed through the program increased substantially between January 2020 and the most recent entrant in October 2022 (**Figure 5a**, above). The original consideration for keeping children at the ARC program for 2 years was informed partially by considerations of how to identify families of origin, recruit them to the KPJ program, and establish solid relationships and preparations for reintegration of children. Despite this intention, the majority of children returned to families of origin and did so from later waves of recruited SICY. Given the intention, and likely necessity, to support families and communities of origin to provide better support to children returning home from street situations, identifying mechanisms to rapidly respond to the reintegration of SICY by developing social support systems for the children and their families is essential. As data show, participation in the KPJ program is significantly associated with children not returning to street situations. The KPJ program demonstrates rapid growth and acceptability, positioning the strategy to combine reintegration efforts with community transformation efforts as meriting further research and development. The fact that duration on the street predicts significantly lower rates of reintegrating with families of origin indicates the need for early intervention with children who newly arrive on the streets. We previously found duration of time on the street predicts substance use (Goodman et al., 2023), which is consistent with socialization in street culture that protects SICY by providing an alternative social habitus to the broader culture (Hills et al., 2016). Extended time on the street may reinforce participation and identification with a sub-culture in opposition to the broader culture and may challenge any existing bonds of affection between SICY and their families. Rapid intervention appears necessary to promote family-based reintegration, requiring further shifts in community-based programming.

4.1.1. Children's self-determination and mental health

Children's interests/desires at time of intake predicted subsequent outcomes. Children who expressed a desire to reintegrate with their families were more likely to do so. Children who expressed fewer interests in any activity (e.g., sports or socializing) prior to being admitted to the ARC were more likely to return to the streets subsequently. Lack of interest in activities is characteristic of depressive symptoms, but could be due to other socio-ecological or psychological factors. Mental health states conducive to successful reintegration should inform future research efforts, including depression, hope, and psychological resilience (e.g., Watson et al., 2020; Lenz, 2021).

The ARC program began collecting psychometric data on children entering the program in April 2016, but program leadership abandoned this approach until greater clarity could be gleaned to inform what psychometric properties were likely to be important. From these observations, we find a few different measures that may be important to promoting structural resilience.

4.1.2. Potential post-traumatic stress, blame attribution, and depression

Children who reported more abuse on the streets were less likely to reintegrate with their families of origin, controlling for an expressed desire to do so. This may be related to persistent PTSD, lack of sense of felt safety, or other psychosocial factors (Morton et al., 2022; Neuner, 2022; Wesarg et al., 2022).

Lingering traumatic experiences may complicate integration of children with families and communities of origin and may drive

TABLE 4 Multinomial logistic regression of program outcomes on four subsets of predictor variables.

	Subset 1						Subset 2						Subset 3						Subset 4					
Outcome:	B			C			B			C			B			C			B			C		
	RR	95% CI		RR	95% CI		RR	95% CI		RR	95% CI		RR	95% CI		RR	95% CI		RR	95% CI		RR	95% CI	
Child's age (years)	1.47***	1.22	1.77	1.3**	1.09	1.55	1.40***	1.14	1.73	1.24*	1.04	1.47	1.59***	1.26	2	1.25*	1.05	1.49	1.41***	1.18	1.69	1.28**	1.07	1.53
Family owns land	0.63	0.3	1.31	0.33*	0.13	0.81																		
No identifiable family	0.16**	0.05	0.51	0.67	0.29	1.56																		
Years on the street							1.56***	1.26	1.95	1.13	0.88	1.47												
Abuse on streets, emotional							2.99*	1.26	7.11	0.56	0.24	1.29												
Abuse on streets, economic							2.62*	1.07	6.37	0.77	0.28	2.09												
Number of interests							1.12	0.79	1.6	0.63**	0.45	0.89												
Later entry date to ARC (q5)													0.27***	0.16	0.45	0.73	0.49	1.08						
Months spent at ARC													0.97	0.91	1.04	0.92*	0.84	0.98						
Child desires to reintegrate with family													0.89	0.32	2.43	0.4*	0.17	0.92						
No follow-up													4.15***	1.74	9.87	3.06*	1.23	7.62						
Family joined KPJ																			0.44	0.15	1.28	0.1*	0.01	0.77

Multinomial logistic regression comparing three outcome categories using two sets of comparisons: A vs. B, and A vs. C. (A) Reintegrated with family and enrolled in school; (B) placed in boarding school, polytechnic school, or supported start a business; (C) left program early, or subsequently relapsed. Four subsets reflect the four stages of (1) life before street, (2) life on street, (3) life in ARC program, and (4) program support received by family. *Indicates $p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

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TABLE 5 Multinomial regression of program outcomes on multi-level and multi-component elements.

Description of category	Dependent variable category					
	Outcome B			Outcome C		
	Reintegrated some place other than family of origin			Returned to the streets		
	RR	95% CI		RR	95% CI	
Intercept	0.1**	0	0.2	0.03*	0	0.5
Child's age	1.53**	1.14	2.05	1.22*	1.03	1.45
Years on the street	1.3^{t}	0.98	1.72	1.36^{t}	0.94	1.96
Street abuse, economic and/or emotional	2.69**	1.24	5.82	0.81	0.38	1.74
Interests (sum)	1.96**	1.24	3.09	0.7^{t}	0.46	1.05
Date of entry (q5)	0.28***	0.17	0.47	0.84	0.56	1.28
Child desires to reintegrate with family	0.3*	0.1	0.88	0.68	0.23	2
Months at ARC	0.96	0.9	1.03	0.91*	0.84	0.99
Family joined KPJ	0.79	0.14	4.4	0.12*	0.02	0.84
No follow-up	4.55**	1.76	11.75	2.73*	1.07	6.99

Multinomial regression with robust standard errors comparing (A) reintegration with family/attending school with (B) placed in boarding school, polytechnical school, or starting a business or (C) leaving program early/relapsing to streets. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; $^{t}p < 0.1$.

children to attribute their street-based hardships to their families of origin (Shaver, 2012). The extent to which these dynamics undermine family-based reintegration of SICY is unexplored to our knowledge. Depression, marked by a lack of interest, may also prevent children from wanting to envision alternatives to their street situations. Measurements of PTSD, attribution of guilt, felt safety, and depression may inform structural resilience initiatives with SICY (Derivois et al., 2017). Further, understanding how SICY form and express values, goals, and interests, and how to promote prosocial values and goals, may be a generative direction for structural resilience interventions.

4.1.3. Secondary findings

While excluded from primary analyses, 22 observations from the original total 253 engagements were from the second encounter with children and three observations were from the third engagement with children. Of the 22 second-time encounters, 8 (36%) returned home and to school, 3 (14%) returned to a polytechnical or boarding school, 9 (41%) relapsed to the streets or left the program early, and 2 (9%) remained at the ARC at the time of data entry. Of the 3 third-time encounters, 2 returned to the street and 1 remained at the ARC at the time of data entry.

4.1.4. Protection on the streets

In addition to addressing the mental and behavioral health of SICY to support family-based reintegration, interventions properly informed by a socioecological perspective will seek to promote safety of children living on the streets. This must not be a final strategy, but rather a harm-reduction approach to support reintegration of children whenever possible. In presenting these findings to local stakeholders in Meru County, leaders of the local police force brought up that the forms of abuse reported by SICY in the intake form were criminal. The ARC program strengthened its relationship with the police leadership with a commitment to report these cases and work with the legal system whenever possible. However, the ARC leadership also noted that children report being mistreated by police on the streets too, undermining their confidence in the protection the police might provide. Finding workable solutions to this tension between trust and mistrust of police and other adults, while ensuring the rights of children living on the street, requires locally contextualized approaches. Reducing harm toward SICY will require engaging with community norms and attitudes toward people living on the street – regardless of age. Normative engagement and stigma reduction is supported by the Flourishing Community model (Goodman et al., unpublished) but requires further development to protect SICY.

4.1.5. Suggested directions

4.1.5.1. Data standardization

In the context of data collection for reintegrating SICY, data gaps were treated as "0s" due to limitations in the original paper forms. These forms did not provide a way to differentiate between negative responses and missing data (e.g., unanswered questions). Standardizing intake, exit, follow-up and household interview questionnaires is a requirement for successful implementation of Kenyan and international policy shifts toward reintegrating SICY. Treating missing variables as all null was the most conservative approach, decreasing likelihood of rejecting null hypotheses.

4.1.5.2. Family follow-up

The 4R + P strategy, which combines street-based outreach with family and community-level transformation, is shown to be effective. However, further research is needed to understand the characteristics of responsive, adaptive, and welcoming families and communities for reintegrating SICY. While family participation in the program is associated with lower rates of returning to the streets, other factors need to be considered. It is important to determine the factors influencing participation in the program and the long-term outcomes of reintegrated children. Additionally, research is needed to assess the improvement in developmental, psychosocial, and other domains among children whose families participate in the program. Anecdotal evidence suggests that

communities provide economic, social, educational, and food support for KPJ families and welcome returning children back into the community. However, further research is required to understand the adaptation of these children and the factors that support successful reintegration in educational, psychosocial, physical, and future economic domains.

4.1.5.3. Active monitoring and follow-up

Policy shifts regarding the work with SICY, both in Kenya and globally, have been driven by a recognition of the exploitative depictions of institutionalized children for fundraising purposes, which often result in limited benefits for the children themselves. To prevent a repetition of such ineffective practices, active monitoring is crucial. We included post-intervention monitoring as a variable to address potential censoring and to guide the strategic use of follow-up measures. However, we found significant variations in the duration of follow-up across different outcomes. The original aim of the KPJ program was to support observations and follow-up of reintegrated children, but only 12% of families joined the program, hindering this effort. To ensure that children truly benefit and to prevent interventions from becoming mere revolving doors, wasting donor funding and community goodwill, it is imperative to make future investments in post-intervention follow-up. This will help to avoid children returning to the street situations from which they were supposedly "rescued."

4.2. Structural resilience-related discussion

We advocate for the adoption of structural resilience as a determinant of other forms of resilience for SICY. Exclusively individualistic notions of resilience are inadequate and potentially harmful. "What makes it possible for this child to endure separation from adults, and constant exposure to emotional, physical, sexual, and economic exploitation and deprivation better than other children?" is akin to asking what enables Black Americans in Tuskegee, Alabama to better endure untreated syphilis when a treatment is available (Freimuth et al., 2001).

Supporting structural re-location, such as living with nurturing families, is an essential part of caring for children living on the streets. Program data show that it is possible to reintegrate SICY with their families of origin – here more than 50% of the time. While this study focused on structural outcomes, there is a need to assess other measures of well-being, including academic, mental, and social aspects. Global consensus and empirically supported best practices are urgently needed to enhance the resilience of SICY. Structural resilience provides an over-arching framework to consider other constructs of resilience that may benefit SICY (Southwick et al., 2014). There is urgent need for global consensus on measures and empirically supported best-practices to increase structural, educational, social, mental, behavioral, and physical resilience of SICY.

In the future, we will assess the predictive validity of transdiagnostic, integrative measures that synthesize multiple socio-ecological levels, sectors and processes – such as the Child and Youth Resilience Measure, and the Process-Based Assessment Tool (CYRM-28; Van Rensburg et al., 2019; PBAT; Sanford et al., 2022). The urgency of the need for such consensus within the complexity of the situation animates our preference for transdiagnostic, multilevel, and process-based measurements.

Working toward structural resilience requires robust theory- and evidence-informed socio-ecological frameworks to inform multi-level (individual, interpersonal, communal, institutional, and policy) actions to address the complex phenomenon of SICY. Multidisciplinary inputs and multisectoral cooperation are imperative to meet this opportunity to build a better world with these children and youth.

4.3. Limitations

The data analyzed in this study come from an active program working to reintegrate SICY and promote structural resilience. Data protection measures were limited, and findings should be assessed with caution. This study provides a glimpse of what is possible in intervention and policy-work with SICY and offers an orientation for future research. It is the first study assessing reintegration outcomes of an intervention with SICY in low- or middle-income countries. More studies are needed. The data analyzed in this study emerge from an active program working to reintegrate SICY and promote structural resilience. Data were not collected with the intention to support this study, and data protection measures were limited to self-imposed practices of a novel and evolving non-governmental organization. This study provides a glimpse of what is possible in intervention and policy-work with SICY and offers an orientation for future research. We believe this is the first study to quantitatively assess reintegration outcomes of an intervention with SICY in low- or middle-income countries. More studies are needed. The limitations in data collection and verification processes may have minimal overall impact if this study provides a blueprint for designing socio-ecological models and structural resilience with SICY.

5. Conclusion

This groundbreaking study provides the first evidence from sub-Saharan Africa, as well as any low- and middle-income country, that family-based reintegration of SICY is indeed possible. With over 50% of program participants (n = 227) successfully reintegrating with their families of origin, it demonstrates the potential for positive outcomes. However, it is important to note that over 20% of participants did return to live on the streets.

Several factors were identified as predictors of family-based reintegration, including younger age, fewer years spent on the streets, fewer experiences of abuse while living on the streets, the child's desire to reintegrate with their family, and the involvement of a family member in a novel community-transformation intervention.

The implementation of new national and international policies regarding the reintegration of SICY requires significant shifts in programmatic design and intervention support. It is crucial that future research is guided by psychosocial, community-process, and intra-individual perspectives on resilience. However, this should be done within the framework of a larger socio-ecological view of resilience, referred to as "structural resilience" in this study.

In conclusion, this study provides valuable insights into the potential for family-based reintegration and calls for a comprehensive approach to addressing the needs of SICY in low- and middle-income countries.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the University of Texas Medical Branch, IRB. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required from the participants or the participants' legal guardians/next of kin in accordance with the national legislation and institutional requirements.

Author contributions

MG led the conceptualization of the study, statistical analyses, and wrote the original draft. SS provided additional statistical support, revision of subsequent drafts. AS provided the revision and editorial comments on each draft. AE provided the data curation and supported the field investigation. CM provided the final review edits. HS supported the data interpretation and policy analysis. PK and BR supported the funding acquisition and project conceptualization. LR-G contributed to project supervision, draft reviews, and interpretative analysis. CG contributed to interventional design and data curation. KM led data curation and draft review. SG contributed supervision and project conceptualization. All authors provided support for the conceptual development of the manuscript and final approval.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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Factors affecting resilience in Namibian children exposed to parental divorce: a Q-Methodology study

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Introduction: Divorce is a contributor to family instability within sub-Saharan Africa, and specifically within Namibia, an increasing number of children are exposed to its impact. However, not all children react uniformly to the impact of parental divorce, and many children may be resilient. Understanding what promotes resilience in children post-divorce in African contexts is vital, given the unique socio-cultural context. Therefore, this study aimed to understand how some children are capable of resilience despite exposure to parental divorce in Namibia.

Methods: A multiple case study design was employed to assess the lived experiences of children aged 9–12 post-parental divorce in Windhoek. Using the Child and Youth Resilience Measurement (CYRM-12) scale, 24 children exposed to parental divorce were screened for resiliency. The Q-Methodology, with visual material, was utilized with a sub-sample of 12 children who scored high on the CYRM (50% girls, mean age = 11) to eliminate some of the challenges associated with gathering qualitative data from younger children. The PQ Method 2.35 software program was used for data analysis.

Results: By-person factor analysis identified four statistically significant profiles. A third (33%) of participants loaded on a factor emphasizing "quality parent-child relationships" and a further 33% emphasizing "effective parent conflict resolution." The final two factors emphasized "healthy school attachment" (17%) and "strong community attachment" (17%). All children emphasized a stable, loving familial environment, and frequent visitation with the non-custodial father.

Discussion: Our findings suggest that multiple social ecologies nurture resilience in children exposed to parental divorce in Namibia. Support should be extended beyond the perimeters of the nuclear family, and relationships with extended family members, peer groups, school, and the wider community can play an important role in children's adjustment. The study highlights the importance of contextually grounded resilience as some factors that are emphasized for children from more Western communities do not reflect as strongly in the results of this study. Other factors, including a stronger reliance on community and factors such as the school, peers, and extended family members, may play a bigger role in child resilience post-divorce in Namibia.

KEYWORDS

children, divorce, family instability, Namibia, protective factors; Q-Methodology, resilience

1. Introduction

The family unit remains central to the optimal development of children, and, as such, the presence of divorce, a contributor to family instability (Clark and Brauner-Otto, 2015), constitutes a risk to children and youth. However, despite research findings on the negative consequences, not all children react uniformly to divorce (Brand et al., 2019), and many have been able to thrive (Kelly and Emery, 2003; Ruschena et al., 2005). Divorce is a global phenomenon, significantly affecting all lives connected to the breakdown of a marriage. Though accurate divorce rates have proven difficult to calculate (Amato, 2010; Kennedy and Ruggles, 2014), it is estimated that 50% of all marriages will lead to divorce (Anderson, 2014). In Namibia, the majority of marital unions and divorce occurrences are still conducted within African customary laws (Republic of Namibia Annotated Statutes, 2009). Hence, civil registration of marriages and divorces is limited, making statistical deductions and comparisons regarding divorce challenging. However, in 2015, The Namibian newspaper reported that divorce remained one of the primary societal problems in Namibia (The Namibian, 2016).

Several studies have reported poor adjustment of children post-divorce. In a meta-analysis of 54 studies spanning almost 30 years, Auersperg et al. (2019) found evidence of a consistent risk of a variety of mental health conditions post-divorce. This is confirmed by longitudinal research that found higher rates of anxiety/depression, and antisocial behavior in children whose parents divorced compared to those who remained married, both at the time of the divorce and several years later (Strohschein, 2005). Despite these findings, Karela and Petrogiannis (2020) argue that the consequences of divorce remain inconclusive and may depend on the presence of particular risk and protective factors. Some of the more consistent risk factors associated with a negative outcome have been linked to the parental subsystem. In a meta-analytic study, e.g., van Dijk et al. (2020) found that interparental conflict and negative parental behaviors had a negative effect on child adjustment. Indeed, with younger children, Karela and Petrogiannis (2020) found that children who exhibited higher levels of resilience experienced less parental stress and that there was a more supportive relationship between the parents. Similarly, for adolescents, increased internalizing problems are reported with negatively engaged parents (Rejaän et al., 2022), whereas adolescents whose parents exhibit a cooperative pattern show the least amount of internalizing and externalizing problems. Indeed, parental support has been linked to overall better outcomes for children supporting the notion by Fergus and Zimmerman (2005) that secure attachment to either one or both parents tends to mitigate the subsequent effects of exposure to family adversity and hence, promotes resilience in the child. The role of parental involvement, including the role of the father, has been found to have a positive impact on children's adjustment (Amato, 1991). However, despite the post-modernistic shift in research focusing on the development and identification of individual and familial strengths, the studies that investigate positive outcomes as well as normal development in individuals living in alternative familial structures such as those created by the dissolution of a marriage are still limited, particularly in non-Western contexts. Research continues to portray a conservative perspective by focusing on the detrimental influences of parental divorce on children's capacity for healthy adjustment (Bernardi and Radl, 2014; Arkes, 2015) and remains a concern (Mohi, 2014). The need to explore processes that enable positive adjustment to multiple transitions amidst marital dissolution remains.

The past decade has brought about a budding interest in the positive aspects of human functioning and adaptability, especially in the context of adversity such as marital dissolution (Seligman and Csikszentmihalyi, 2000). Furthermore, scholars have been exploring the notion of beneficial parental divorce as children from high-conflict households are more inclined to experience behavioral and psychological problems (Amato and Kane, 2011). Moreover, conservative notions of divorce have led many parents to remain in unhealthy, high-conflict marriages out of fear of the detrimental impact that exposing children to a single-parent family might have and disregarding that this could pose more harm than good (Gadoua, 2008). For example, Lindsey et al. (2009) note that in terms of family interrelations, the development of the child's capacity for social interactions and their sense of security is negatively impacted. Hence, some have argued that a divorce may become an avenue for peace of mind, growth, and a chance for children to thrive (Chavez, 2010). Furthermore, divorce may provide a child with an environment characterized by fewer stressors, which, in turn, will facilitate normal development (Amato et al., 2011).

Children are forced to grow up and function in an increasingly stressful world. Therefore, it becomes unrealistic to argue that they can be protected from experiencing negative events. Over the last 50 years, resilience research involving children and families has aimed to investigate the health-enhancing capacities, the presence of resources within an individual, familial, or societal context as well as the specific developmental pathways of those most vulnerable (Pedro-Carroll, 2001; Kelly and Emery, 2003; Theron and Theron, 2010; Ungar, 2012). The concept of resilience refers to the process characterized by exposure to significant risk and a subsequent positive developmental outcome amidst that exposure (Rutter, 2006). Building on these definitions, resilience is now increasingly conceptualized as an interactive process—between the individual and their environment as well as among protective and risk factors—and not as a fixed individual attribute. Resilience is, therefore, increasingly not viewed as a static trait. The ecological systems theory explores the interrelationship between the individual and their unique environments to determine possible developmental impacts thereof on the child (Bronfenbrenner, 1986; Garmezy, 1991; Garbarino, 1995). Garmezy's (1991) triadic model of resilience explained the dynamic interaction between protective and risk factors on three levels, namely the individual, the family, and the environment. Furthermore, the model continues to highlight resilience as a means of empowering individuals to shape and be shaped by their environment. Similarly, the interactive ecological-transactional model of development emphasizes how development and adaptation are influenced by the interaction among different contexts, such as culture, neighborhoods, and family (Cicchetti and Lynch, 1993). Thus, the degree of resilient features in an individual depends on the extent to which environmental factors are able to nurture the capacity for resilience.

Resilience can be seen as context dependent; elements in the child's surroundings need to support and nurture resilience for the child to experience improvements in their wellbeing.

Mainstream resilience research continues to stem from a Eurocentric epistemology, placing emphasis on factors of resilience characteristics of the mainstream population and their accompanying definition of healthy adjustment (Ungar, 2004, 2008; Boyden and Mann, 2005). As a result, limited investigation has been conducted into the relevance of resilience to non-Western world cultures, in which the necessary resources required for survival may vary compared to those available to Western populations (Ungar, 2008). Similarly, Masten (2014) emphasized the need to understand what happiness and wellbeing mean in different contexts and experiences. For example, up to 37% of children in Namibia do not live with a biological parent [The Nambia Ministry of Health Social Services (MoHSS) ICF International, 2014]; this highlights the role that extended and informal care systems may play in children's lives. According to Cowen (1994), depending on different situations, there may be different pathways to resilience. While some features of healthy adjustment might be relevant to various populations, the significance of each varies when cultural and contextual differences are considered, emphasizing the idiosyncratic nature of various survival processes (Ungar, 2008).

Therefore, the present study aimed to explore the lived experiences of resilience in children, post-parental divorce, within middle childhood, in one African context, Namibia. The study seeks to identify and understand the protective factors that nurture the capacity to adjust and thrive, post-parental divorce. As such, as we are attempting to understand protective factors at different levels and how the child interacts with them, we consider resilience to be a process. Middle childhood, which typically includes the years from 9 to 12, is an important developmental phase for children cognitively, socially, and emotionally, and for the development of their self-concept (Louw, 1998). Children in this developmental phase may be especially vulnerable to the effects of parental divorce as the development of constructive social relationships and self-esteem occurs during this stage. The family continues to play a crucial role in the socialization of the child during middle childhood. Furthermore, research on parental divorce continues to be predominantly conducted from the perspective of adolescents and adults, emphasizing the need for studies to explore younger children's perspectives on their experiences of parental divorce (Maes et al., 2012). This is especially important as post-divorce adjustment tends to be mediated primarily by the child's perceptions and experiences of the divorce event (Maes et al., 2012).

2. Methods and materials

2.1. Q-Methodology

The current study uses a Q-Methodology, considered by most researchers to be a mixed-method, as data are collected qualitatively using a small number of participants but analyzed using quantitative methods (Bashatah, 2016). Q-Methodology is, therefore, a hybrid method that contains elements of interviewing, thematic analysis, and factor analysis (Størksen et al., 2012). Q-Methodology was primarily designed for the purpose of investigating and categorizing patterns of individual perspectives and lived experiences related to a specific topic by conducting rigorous quantitative analysis (McKeown and Thomas, 2013). Moreover, by analyzing these individual responses, the researcher is able to extract rich data. In this manner, it becomes possible to explore subjectivity quantitatively. Q-Methodology seeks to explore and interpret various viewpoints that exist within the target population (Ward, 2010). Using a multiple case study design, the study seeks to provide a more in-depth comprehension of the multiple facets involved in child resilience after exposure to divorce and a better understanding of the differences and similarities between participants.

2.2. Sample and sampling procedure

The participants of this study were selected using purposeful sampling (Yin, 2011), with participants from schools in Windhoek selected based on their availability and willingness to participate in the study. However, of the total of eight schools approached, only two agreed to participate, largely due to the COVID-19 pandemic. Children between the ages of 9 and 12 whose parents had been divorced for 2–4 years were invited to participate in the study. Due to the sensitive nature of the topic, all recruitment was done by the schools, which were provided with all the necessary information. Children undergoing therapy and exposed to multiple parental divorces were excluded from the study.

Overall, 24 children (between the ages of 9 and 12) were part of the data collection process. However, as this study was specifically interested in resilience, only the data from 12 children scoring high on the resilience measure were included in the final study (Table 1). In a Q-Methodology study, participants are viewed as variables; hence, it is not necessary for the number of participants to be excessively large (Webler et al., 2009). Of the 12 participants, 50% were girls, and the mean age was 11 years. The majority of the participants (41.7%) were in grade 5, while the remaining participants were in grades 3, 4, and 6. The home languages reported by the participants were mainly English (33.3 %), with a few of the participants being Afrikaans, Khoekhoegowab, and Oshiwambo speakers. The average number of years since the parental divorce was 3 years.

2.2.1. The Child and Youth Resilience Measurement

The Child and Youth Resilience Measurement (CYRM) questionnaire was administered to all 24 participants to screen for resilience (Ungar and Liebenberg, 2011), with higher total scores indicating the presence of more resilience components. By incorporating upper and lower half scoring, 12 participants were identified as having more resilience components than their counterparts. This upper half group had a mean score of 47 (range: 43–51), whereas the lower half group had a mean score of 26 (range: 26–35).

TABLE 1 Socio-demographic data ($n = 12$).

	n	%
Age (years)		
9	2	16.7
10	3	25.0
11	5	41.7
12	2	16.7
Sex		
Male	6	50.0
Female	6	50.0
Grade		
Grade 3	2	16.7
Grade 4	3	25.0
Grade 5	5	41.7
Grade 6	2	16.7
Custodial parent		
Mother	12	100.0
Home language		
Oshiwambo	2	16.7
Afrikaans	3	25.0
Nama/Damara	3	25.0
English	4	33.3
Time since parental divorce		
2 years	7	58.3
3 years	4	33.3
4 years	1	8.3

2.3. Instruments

2.3.1. Socio-demographic questionnaire

Each participant completed a short socio-demographic questionnaire (age, sex, and home language of each participant).

2.3.2. The Child and Youth Resilience Measurement (CYRM-12)

The CYRM-12, a 17-item scale on a 3-point Likert scale, was administered to all 24 participants to screen for resiliency (Ungar and Liebenberg, 2011). The CYRM-12 is a measure of individual, relational, and communal resources available to individuals that may enhance resilience. The CYRM-12 demonstrated a good fit to the Rasch model ($\alpha = 0.82$) and is applicable across diverse cultures and contexts, including children from South Africa (van Rensburg et al., 2019).

2.3.3. The Q-set

To resolve some challenges of gathering qualitative data from younger children, the Q-Methodology (Brown, 1980) with visual material was utilized. Participants who take part in a Q-Study are exposed to a set of cards containing either subjective statements or visual images related to the research topic. In this method, participants rank several statements about the topic in relation to other statements. The statements are referred to as a Q-set.

The first step in the Q-Methodology involved the development of an initial concourse. For this particular study, the initial concourse was developed through an extensive literature review of possible indicators of resilience among children exposed to parental divorce (Brown, 1980; Van Exel and de Graaf, 2005). Various databases were searched using terms related to resilience, divorce, and its impact, as well as risk and protective factors related to the individual, family, and community. It was important to ensure that both intra-familial and extra-familial factors could be examined. Furthermore, reference lists of key literature were scanned to further expand the search. For the second step, a Q-sample (a set of statements) related to parental divorce and instances of resilience was generated from this initial concourse and distilled. It was important that all statements identified be representative of the different aspects of the broader concourse and that there were statements with which participants could agree as well as disagree (Coogan and Herrington, 2011). Piloting (see below) these statements was an important step to ensure that an extensive range of coverage was achieved. Once statements were developed, they were subdivided into various categories (e.g., familial protective factors and extra-familial protective factors). These categories function to ensure that all sub-aspects of the topic have been included and that these statements do not display favoritism toward some aspects over others (Coogan and Herrington, 2011). The subjective viewpoints of each participant could only be discovered if all possible areas were explored. Furthermore, the total number of statements had to make it possible to produce different viewpoints from the self-reference of the participant (Thorsen, 2006). Once the Q-sample is generated, it is generally known as a Q-set and is placed on cards for participants to effectively sort through the statements. Visual pictures, designed by the first author, were used together with the Q-set to provide children with guidance on how to verbally express their emotions (Figure 1). The complexity and number of statements depend on the cognitive and developmental level of the participants, but the sample of statements normally ranges between 40 and 80 (Alderson et al., 2018). Considering both the age and developmental level of participants, this study contained 40 statements to ensure that children had the mental capacity to maintain focus throughout the sorting process.

2.4. Pilot study

A pilot study in the form of a focus group discussion was conducted with six participants of both sexes, aged 9, in order to test the clarity and general comparability of the visual statements for the participants. Participants were also asked whether they felt any other aspects of their post-divorce experience should be included. A group size of six participants was deemed optimal (de Leeuw,

FIGURE 1
Example of a card with visual material used during the study.

2011) due to the age of the participants (Morgan, 1997), and group discussions did not exceed 30 min. All participants communicated a clear understanding of both the instructions and the content of each statement; hence, no major alterations were made to the set of statements.

2.5. Procedure

Once participants were identified, contact with the legal guardian was initiated. All required documentation, including an information leaflet, parental consent, and participant assent forms, was provided and completed before the data collection process began. Each school provided a vacant classroom and indicated a suitable time for data collection. Data were collected by the first author (JV) in the following order: CYRM-12 and the socio-demographic questionnaire, followed by the Q-sorting procedure. During the Q-sorting procedure, the children/participants were individually presented with the Q-set (set of statements) on individual cards together with a predesigned quasi–normal-shaped distribution grid developed for the sorting of the cards. Participants were invited to consider their parents' divorce and to sort each card in the distribution grid "in accordance with what is most like or unlike" their situation. The distribution grid placed the most agreeable statements (most like) on one side and the most disagreeable statements (most unlike) on another side. If a statement was found more on the right side of the grid, the participant's sorting "agreed" more with the statement and vice versa for statements found more on the left side. Rankings ranged from +3 (strongly agree) to −3 (strongly disagree). In order to make the sorting process easier for the participants, they were advised to create three piles of statements, namely those they agreed with, those they mostly disagreed with, and those they felt mostly neutral about (Coogan and Herrington, 2011). Thereafter, participants were instructed to place each pile of statements on the grid according to their level of agreement, working to fill the columns representing all the agreed upon statements until they were depleted. The same principle was applied for statements that were most disagreed with, but these were placed under the −3 column. The subsequent open spaces in the center of the distribution grid were then filled with all the statements the participant felt mostly neutral or uncertain about. Once all statements were placed on the Q-grid and the participant was satisfied with their sorting, it formed what is referred to as the Q-sort. The Q-sort reflected each participant's perspective and experiences surrounding the topic. This was recorded by a photograph for later quantitative analysis (McKeown and Thomas, 2013). The entire interview, together with the Q-sorting procedure, lasted for 40–60 min.

2.6. Data analysis

Descriptive statistics (socio-demographics) were analyzed using IBM SPSS Statistics for Windows, Version 21.0. All Q-sorts were plotted into the PQ Method 2.35 software program (Schmolck, 2014) and analyzed using by-person factor analysis (Watts and Stenner, 2005). Hence, participants correlate with others who display similar perspectives based on their Q-sorts (Valenta and Wigger, 1997). Intercorrelations between each individual Q-Sort were determined by computing a correlation matrix (Brown, 1980) using principal component analysis (Militello and Benham, 2010).

This resulted in the identification of factors representing clusters of participants who share the same perspectives or experiences in relation to the topic—in this case, displays of resilience post-parental divorce (Van Exel and de Graaf, 2005; Akhtar-Danesh et al., 2008). By using the correlation matrix, different sorts were grouped into eight unrotated "factor" groups of participants who share similar viewpoints, which is the maximum number of factors that can be extracted using the PQMethod program. In contrast to the R-method of factor analysis which groups variables, Q-Method analyses the data by grouping participants (McKeown and Thomas, 2013).

Factors that have eigenvalues >1.00 were deemed significant, explaining a significant amount of variability within the data (Watts and Stenner, 2005). Eigenvalues <1.00 are considered too weak and do not explain a significant amount of variance within the data. In addition, the factor must have a minimum of two significant participant loadings. Using the Varimax technique, four factors (Factors 1–4) had eigenvalues >1.00 and hence warranted further exploration (Table 2).

The rotated factors comprise 88% of the total variance of the study, where Factor 1 represents 31%, Factor 2 represents 15%, Factor 3 represents 18%, and Factor 4 represents 24%. For Factor 1, four participants were loaded onto the factor with a significance level of a p-value of < 0.01. On Factor 2, two participants were loaded at a significance level of a p-value of < 0.01. Factor 3 also comprised two participants with a loading at a p-value of < 0.01 significance level and Factor 4 had four participants with a loading at a significance level of a p-value of < 0.01. No participant was loaded on more than one factor. The correlation between the final four factors that were

TABLE 2 Four-factor solution following Varimax rotation.

Q-Sort ID	Factor 1	Factor 2	Factor 3	Factor 4
P1	0.8348*	−0.0231	0.1266	0.2993
P2	0.2595	0.1192	0.2772	0.8648*
P3	0.2975	−0.0438	0.0069	0.9078*
P4	0.8917*	0.0661	0.1805	0.2633
P5	0.1355	0.2379	0.4893*	0.6941*
P6	0.8816*	0.0164	0.0956	0.1422
P7	0.1287	−0.1204	0.9197*	0.2100
P8	−0.1147	0.9083*	−0.0657	0.1394
P9	0.1488	0.9062*	−0.0809	0.0211
P10	0.5423*	0.0994	0.1978	0.6732*
P11	0.8977*	−0.0082	0.2011	0.2084
P12	0.2982	−0.0985	0.8949*	0.1697
% explained variance	31	15	18	24
Number of participants loading	4	2	2	4

*Significance at a p-value of <0.01.

TABLE 3 Correlation between factor scores.

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	1.0000	0.0381	0.3973	0.5591
Factor 2	0.0381	1.0000	−0.1601	0.1366
Factor 3	0.3973	−0.1601	1.0000	0.4259
Factor 4	0.5591	0.1366	0.4259	1.0000

extracted is shown in Table 3. Factors 1 and 4 presented the highest correlation (0.56), without any participants loading on both factors.

2.7. Research ethics

Permission for the study was obtained from the University of Namibia's Research and Ethics Committee (UREC) and the Khomas Regional Council (Directorate of Education, Arts, and Culture). In each case, the primary caregiver provided written informed consent, and written assent was sought from each participant. Participants were continuously reminded of their right to withdraw from the study with no resulting negative consequences. Specific signs indicative of the child's wishes to withdraw were agreed upon. Personal information remained confidential unless there was a risk of harm. To maintain anonymity, each participant was assigned a unique code for the questionnaires and answer sheets. To minimize harm, the researcher was mindful of possible effects on the child throughout the process. Participants and their parents had access to counseling services when it was required. Data obtained from participants will be stored for 5 years in a lockable cabinet to which only the researchers have access.

3. Results

The following section describes each factor individually. The discussion of the factors will not follow a normal numerical pattern but will be based on where most participants are loaded. Therefore, Factor 1 (33% of participants) and Factor 4 (33%) will be discussed first, followed by Factor 2 (17%) and Factor 3 (17%).

3.1. Factor 1: quality parent–child relationships

The highest positive set of statements for participants that loaded on Factor 1 is shown in Table 4. Four participants (33%) were significantly loaded on Factor 1, two being Afrikaans speakers, one being an Oshiwambo speaker, and one being a Nama/Damara speaker. Three participants (75%) were male. Participants who loaded onto this factor identified statements emphasizing the positive quality of the relationship with their parents. Statements indicate that participants place emphasis on the quality of the relationship with both parents pre- and post-divorce and are also suggestive of a high value placed on transparency and effective communication within those relationships, as well as frequent contact with their father.

The two strongest agreed statements were "I feel close to my mother" and "I feel close to my father," suggesting that these participants value a close, secure relationship with both their parents. Moreover, the next two highest ranked statements, "My family loves me" and "I feel safe and loved at home," showed that these participants view their familial environment as overall safe and loving. Statement 6 ("I see my father regularly"), also among the top-ranked statements, indicates that these participants have regular contact with the non-custodial parent. Combined with a high rating of a close relationship with their father (statement 2), a positive father–child attachment is suggested. Also among the highest ranked statements are statement 17, 20 and 19 which highlight participants' positive rating of the quality of the parent–child communication.

For participants loading on Factor 1, the strongest disagreement was expressed with statement 33 ("We stayed in the same home after the divorce"), statement 32 ("I remained in the same school after the divorce"), and statement 34 ("We stayed in the same neighborhood after the divorce"). The statements collectively suggest that, while maintaining stability and familiarity is important for post-parental divorce adjustment, it was not perceived as an important factor for participants in this group.

TABLE 4 Factor 1 most agree and disagree statements.

Statement #	Most agree statements	z-score	Grid position
1	I feel close to my mother	1.748	3
2	I feel close to my father	1.748	3
3	My family loves me	1.601	3
16	I feel safe and loved at home	1.544	3
7	I see my father regularly	1.415	2
8	I felt close to my father before their divorce	1.166	2
9	I felt close to my mother before their divorce	1.166	2
17	I feel comfortable talking to my parents	1.166	2
20	My parents always talk to me and explain things I do not understand	1.166	2
19	My parents explained their decision to divorce to me	1.019	2
Statement #	**Most disagree statements**	**z-score**	**Grid position**
33	We stayed in the same home after the divorce	−1.748	−3
32	I remained in the same school after the divorce	−1.748	−3
34	We stayed in the same neighborhood after the divorce	−1.748	−3

TABLE 5 Factor 4 most agree and disagree statements.

Statement #	Most agree statement	z-score	Grid position
4	My parents get along well	1.770	3
11	My mother does not speak badly of my father in front of me	1.770	3
12	My father does not speak badly of my mother in front of me	1.77	3
13	My parents fight less now than before the divorce	1.524	3
10	My mother is happy to allow visits with my father	1.427	2
5	I feel close to my grandmother	1.180	2
3	My family loves me	1.044	2
Statement #	**Most disagree statement**	**z-score**	**Grid position**
31	I feel close to my coach	−1.033	−2
24	I have fun at school	−1.136	−2
29	I feel close to my friend's parents	−1.18	−2
15	I see my grandfather often	−1.361	−3
25	I am happy to go to school	−1.499	−3
34	We stayed in the same neighborhood after the divorce	−1.77	−3
33	We stayed in the same home after the divorce	−1.77	−3

3.2. Factor 4: effective parent conflict resolution and relationships

One-third of participants (33.3%) were significantly loaded on Factor 4 ($p < 0.01$), with two being English speakers, one being an Afrikaans speaker, and one being an Oshiwambo speaker. Furthermore, Factors 1 and 4 showed the highest correlation (0.56), without participant loadings on both factors. Participants who loaded significantly on this factor, rated statements highly that emphasized effective parental conflict resolution as well as their ability to maintain a civil and cooperative relationship post-divorce as important contributors to resilience after their parents' divorce (Table 5). Among the highest sorted statements were statement 4 "My parents get along well," statement 13 "My parents fight less now than before the divorce," and statements 11 and 12, indicating parents' ability to refrain from speaking negatively about each other in front of their children. These statements highlight the participants' shared belief that their parents' ability to resolve conflict civilly and cooperatively has contributed to the children's capacity to adjust post-divorce.

Furthermore, participants who loaded significantly on this factor, highly rated statement 10 "My mother is happy to allow visits with my father." As all participants identified their mother as the custodial parent, this group of children was able to see their non-custodial parent (their father) on a regular basis, with cooperation from their mother. Noteworthy, is the fact that participants who loaded on Factor 4 sorted statements 33 "We stayed in the same home" and statement 34 "We stayed in the same neighborhood after the divorce" among the lowest positions (-3), much like those participants in the Factor 1 group (Table 5).

TABLE 6 Differing statements between Factors 1 and 4.

Statement #	Statement	Factor 1 values	Factor 2 values
20	My parents always talk to me and explain things that I do not understand	2	−1
32	I remained in the same school after the divorce	−3	1
26	I am happy and satisfied most of the time	−2	1
19	My parents explained their decision to divorce to me	2	−2

While Factors 1 and 4 share the highest correlation (0.56), some distinct differences between the two groups also occurred (Table 6). The statements listed in Table 6 are all three or more columns apart on the distribution grid. Participants who loaded on Factor 1 identified statement 20 "My parents always talk to me and explain

TABLE 7 Factor 2 most agree and disagree statements.

Statement #	Most agree statement	z-score	Grid position
28	I feel close to my teacher	1.766	3
31	I feel close to my coach	1.766	3
32	I remained in the same school after the divorce	1.766	3
22	Teachers at my school help and support me	1.475	3
39	I feel safe and happy at school	1.468	2
24	I have fun at school	1.178	2
25	I am happy to go to school	1.178	2
30	I participate in activities after school	1.178	2
Statement #	**Most disagree statement**	**z-score**	**Grid position**
37	My friends and I follow the rules	−1.178	−2
29	I feel close to my friend's parents	−1.178	−2
36	I have enough food to eat every day	−1.475	−2
34	We stayed in the same neighborhood after the divorce	−1.766	−3
15	I see my grandfather often	−1.766	−3
35	I feel safe in my neighborhood	−1.766	−3

TABLE 8 Factor 3 most agree and disagree statements.

Statement #	Most agree statements	z-score	Grid position
5	I feel close to my grandmother	1.678	3
23	I have close friends	1.678	3
29	I feel close to my friend's parents	1.678	3
6	I feel close to my grandfather	1.438	3
14	I see my grandmother often	1.359	2
1	I feel close to my mother	1.119	2
15	I see my grandfather often	1.119	2
16	I feel safe and loved at home	1.119	2
Statement #	**Most disagree statements**	**z-score**	**Grid position**
26	I am happy and satisfied most of the time	−1.119	−2
31	I feel close to my coach	−1.119	−2
33	We stayed in the same home after the divorce	−1.359	−2
34	We stayed in the same neighborhood after the divorce	−1.359	−2
25	I am happy to go to school	−1.359	−2
19	My parents explained their decision to divorce to me	−1.438	−3
20	My parents always talk to me and explain things that I do not understand	−1.438	−3
32	I remained in the same school after the divorce	−1.678	−3

things that I do not understand" and statement 19 "My parents explained their decision to divorce to me" as important compared to participants who loaded on Factor 4. This sorting ties into their shared perspective, which identified quality familial/parental–child relationships and transparent communication among the most important protective factors in nurturing their resilient capacities and ability to adjust after the divorce of their parents. As opposed to Factor 1, participants in Factor 4 rated statement 32 "I remained in the same school after the divorce" higher on the distribution grid (+1).

3.3. Factor 2: healthy school attachment

Two of the 12 participants (17%) significantly loaded on Factor 2 ($p < 0.01$), one Nama/Damara-speaking child, and one English-speaking child. Table 7 below presents the arrangement of statements by the participants who scored significantly on this factor. Participants identified healthy school attachment as an important element in their lives. Participants highly ranked statements 28 and 31, which signal a close relationship with their teacher and coach. Furthermore, a high ranking on statement 22 "Teachers at my school help and support me," statement 39 "I feel safe and happy at school," statement 24 "I have fun at school," and statement 25 "I am happy to go to school" further suggests the importance placed on safety, happiness, and secure attachments at school.

Among the lowest ranked statements are those that touch on socioeconomic conditions such as a satisfactory amount of food to eat every day (statement 36) and conditions surrounding the neighborhood within which the participants reside (statements 35 and 14). This result indicates that this group of children regarded these conditions as least contributing to their ability to adjust and thrive after their parents' divorce.

3.4. Factor 3: strong community attachment

Two participants (0.17%) loaded significantly on Factor 3, one Nama/Damara speaker and one Afrikaans-speaking child. Statements ranked highly by participants in this factor identified a close relationship with members of the community, extended family members, and parents of peers as an influential factor in dealing with the divorce of their parents (Table 8). Among the highest ranked statements were statements 5 and 6, which

indicated a close relationship between the participants and their grandparents, as well as statement 29 ("I feel close with my friends' parents"). Statement 23 ("I have close friends") was also among the highest placed statements and signals that participants in this group identified peer relationships as important.

Children who loaded on Factor 3 sorted statement 19 ("My parents explained their decision to divorce to me") and statement 20 ("My parents always talk to me and explain things that I do not understand") on the lowest range of the sort. The placement of these statements indicated the participants' shared perspective that transparent communication has not been an important factor when considering resources that nurture their resilience.

3.5. Distinguishing statements

Distinguishing statements refer to statements that are highly ranked on a specific factor in comparison to their rank on the other factors. They enable the researcher to understand the ways in which the extracted factors are unique. The four highest ranked distinguishing statements (statements 2, 17, 20, and statement 19) for Factor 1 indicate the value participants in this group place on a close attachment to one or both parents, together with a transparent and supportive communication (Table 9).

The highest ranked statements (statements 28, 31, 32, 22, and 39) for Factor 2 indicated that children who loaded on this factor reported a close attachment with their school and its personnel as a protective factor. This group of participants did not agree that feeling safe in their current neighborhood or having a close relationship with non-parental adults such as a grandmother had an important contribution to their capacity for resilience. Furthermore, these children neither agreed nor disagreed with the need to have been explained their parents' decision to divorce in order to be able to adjust and cope with their divorce, as shown by the score for statement 19.

Participants in the Factor 3 group highly ranked statements that signaled the importance of having a close relationship with peers and other non-parental adults in attempting to adjust and cope with a changing familial dynamic. Furthermore, they ranked statement 20 negatively, which indicated a disagreement with the statement that emphasizes the importance of having a transparent and supportive channel of communication between parents and the child in order to foster resilience.

For Factor 4, all six distinguishing statements proved to be significant at a p-value of < 0.01 (Table 9). As expected of participants who loaded significantly on this factor, statements 4, 11, and 12 were ranked highest, signaling the importance of effective parental conflict styles within this group of children. Not only do the distinguishing statements of this factor emphasize effective conflict resolution strategies, but they also show a strong agreement that parents' ability to refrain from involving children in conflict situations has greatly aided children's capacity to adjust.

3.6. Consensus statements

Consensus statements refer to statements found among participants based on all four of the emerging factors. Hence, these statements do not distinguish between the different factors but show commonalities (Table 10).

Participants across the four factors agreed with statement 3 "My family loves me" and statement 7 "I see my father regularly," which indicate a stable, loving familial environment, and frequent visitation with the non-custodial father as highly valued by all participants who participated in this study, irrespective of their ethnicity or age. On the other hand, statements that were most highly disagreed with across all four factors included statement 34 "We stayed in the same neighborhood after the divorce" and statement 35 "I feel safe in my neighborhood."

4. Discussion

The current study examined factors affecting child resilience in Namibia, post-parental divorce from the perspective of the child. Using Q-Methodology, this research has identified several social-ecological systems within the child's environment that may protect children from harmful consequences associated with exposure to parental divorce. The current findings support the notion that, in the Namibian context, resilience cannot be limited to being defined as a trait but rather as an interactive process between different systems and how the child interacts with these systems. Children's resilience depends to a large extent on multiple systems and their capacity for nurturing resilience, especially within proximal systems such as the family unit and extended family members, the school, friends, and the wider community (Masten and Cicchetti, 2012).

A third of participants (33.3%) emphasized quality parent–child relationships as an important factor in their lives. These children's rankings indicated that they valued a close, secure relationship with either one or both parents before and after the divorce; they viewed their family environment as safe, stable, and loving and reported having regular visitation with their non-custodial parent. Masten (2014) states that children who live in environments rich in protective resources such as high-quality, supportive, and loving parent–child relationships tend to have an increased capacity for resilience. Rodgers and Rose (2002) found that the quality of parenting post-divorce plays the most crucial role in the adjustment and development of externalizing and internalizing behaviors among children. Fergus and Zimmerman (2005) and Lowenstein (2010) supported this and emphasized a secure attachment to either one or both parents as a mitigating influence and resilience-enhancing factor amidst exposure to a stressor, such as parental divorce. Given that systems are embedded and interconnected within each other, the capacity for resilience within a child might be reflective of the resilience capacity of the caregiving or family system (Masten and Palmer, 2019). This shows the importance of ensuring that both the parents' and the children's acute distress responses to the divorce do not merge and become chronic (Wallerstein, 1991) as it has the potential to become more complicated and challenging to recover from later on. Finally, while previous findings (Roehlkepartain and Syvertsen,

TABLE 9 Distinguishing statements for each factor.

Statement No.	Distinguishing statement	Factor 1		Factor 2		Factor 3		Factor 4	
		Q-sort value	*z*-score	*Q*-sort value	*z*-score	*Q*-sort value	*z*-score	*Q*-sort value	*z*-score
2	I feel close to my father	**3**	**1.75**	1	0.29	2	0.88	2	0.84
17	I feel comfortable talking to my parents	**2**	**1.17***	−1	−0.3	0	0.00	0	−0.14
20	My parents always talk to me and explain things that I do not understand	**2**	**1.17***	0	0.00	−3	−1.44	−1	−0.50
19	My parents explained their decision to divorce to me	**2**	**1.02**	0	0.00	−3	−1.44	−2	−0.87
18	I have rules set by my parents and they hold me to it	**1**	**0.83**	−2	0.59	−2	−0.96	0	0.00
28	I feel close to my teacher	−2	−0.81	**3**	**1.77***	0	−0.08	0	−0.21
31	I feel close to my coach	−1	−0.48	**3**	**1.77***	−2	−1.12	−2	−1.03
32	I remained in the same school after the divorce	−3	−1.75	**3**	**1.77***	−3	−1.68	1	0.18
22	Teachers at my school help and support me	0	−0.33	**3**	**1.48***	0	0.00	0	−0.18
39	I feel safe and happy at school	−1	−0.54	**2**	**1.47***	−1	−0.56	−1	−0.66
24	I have fun at school	−2	−0.89	**2**	**1.18***	−1	−0.24	−2	−1.14
25	I am happy to go to school	−3	−1.06	**2**	**1.18***	−3	−1.36	−3	−1.50
30	I participate in activities after school	0	−0.27	**2**	**1.18***	−1	−0.56	−1	−0.51
33	We stayed in the same home after the divorce	−3	−1.75	**1**	**0.30***	−3	−1.36	−3	−1.77
19	My parents explained their decision to divorce to me	2	1.02	**0**	**0.00**	−3	−1.44	−2	−0.87
5	I feel close to my grandmother	1	0.58	**−1**	**−0.30**	3	1.68	2	1.18
16	I feel safe and loved at home	3	1.54	**−2**	**0.88***	2	1.12	1	0.75
35	I feel safe in my neighborhood	−2	−0.75	**−3**	**−1.77**	−1	−0.56	−2	−0.91
23	I have close friends	0	−0.36	0	−0.29	**3**	**1.68***	1	
29	I feel close to my friend's parents	−2	−0.86	−2	−1.18	**3**	**1.68***	−2	
6	I feel close to my grandfather	1	0.48	−1	−0.3	**3**	**1.44**	−1	
14	I see my grandmother often	−1	−0.72	−1	−0.57	**2**	**1.36***	−1	
15	I see my grandfather often	−1	−0.72	−3	−1.77	**2**	**1.12***	−3	
20	My parents always talk to me and explain things that I do not understand	2	1.17	0	0.00	**−3**	**−1.44**	−1	
4	My parents get along well	1	0.58	1	0.01	1	0.32	**3**	**1.77***
11	My mother does not speak badly about my father in front of me	1	0.29	1	0.59	1	0.56	**3**	**1.77***
12	My father does not speak badly about my mother in front of me	1	0.29	1	0.59	1	0.56	**3**	**1.77***
27	I enjoy playing and having fun	0	−0.21	−2	−0.59	−1	−0.80	**2**	**0.79***
26	I am happy and satisfied most of the time	−2	−0.80	−2	−0.88	−2	−1.12	**1**	**0.66***
32	I remained in the same school after the divorce	−3	−1.75	3	1.77	−3	−1.68	**1**	**0.18***

All values in bold are significant at $p < 0.05$; * values are also significant at $p < 0.01$.

TABLE 10 Consensus statements.

Statement No.	Consensus statement	Factor 1		Factor 2		Factor 3		Factor 4	
		Q-sort value	*z*-score	*Q*-sort value	*z*-score	*Q*-sort value	*z*-score	*Q*-sort value	*z*-score
3	My family loves me	3	1.6	2	0.6	1	0.56	2	1.04
7	I see my father regularly	2	1.41	1	0.59	1	0.8	1	0.58
21*	I believe I am able to achieve tasks at home and school	−1	−0.44	0	−0.29	0	0	0	0.07
34*	We stayed in the same neighborhood after the divorce	−3	−1.75	−3	−1.77	−3	−1.36	−3	1.77
35	I feel safe in my neighborhood	−2	−0.75	−3	−1.77	−1	−0.56	−2	−0.91
37*	My friends and I follow the rules	−2	−0.93	−2	−1.18	−2	−0.88	−2	−0.91
38*	I mostly have happy thoughts	−1	−0.69	−2	−0.89	−1	−0.8	−1	−0.23
40*	I enjoy laughing with friends and family	0	−0.03	−1	−0.3	−1	−0.56	−1	−0.53

For all listed statements, no significant differences were found between factors at a p-value of >0.01, and those flagged with a * are also non-significant at a p-value of >0.05.

2014) recommend that parents maintain as much routine and familiarity post-divorce, participants loading on this factor did not emphasize this as an important feature. It may be that familial stability and quality parent–child relationships have been more influential in nurturing children belonging to this group and may have been a sufficient protective resource to combat the impact of a changed environment (whether it be a change in school, home, or neighborhood), which often accompanies a divorce.

The second most common factor grouping, with a third (33%) of participants loading, endorsed statements that emphasize effective conflict resolution between parents, including their ability to refrain from involving the child in conflict situations and maintaining a cooperative and civil relationship post-divorce. Although an increasing body of literature confirms that parental conflict after divorce increases the risk of poorer outcomes for the children involved (Sorek, 2020), including behavioral, emotional, and social difficulties (Johnston, 1994), there is conflicting evidence regarding whether potential maladjustment resulting from parental conflict should be attributed to conflict during the marriage or only after its dissolution (Elliott and Richards, 1991; Pryor and Rodgers, 2001). Nevertheless, ongoing conditions of conflict may cause children to resort to aligning with one parent against the other, feel compelled to sever the relationship with one parent, and experience subjective feelings of abandonment, heightened anxiety, and feeling "caught in the middle" (Kelly and Johnston, 2005). Therefore, it becomes imperative for parents to employ appropriate conflict resolution strategies in which children remain excluded from parental conflict as a means of increasing their chances for resilience post-parental divorce.

For the third grouping, participants loaded on statements that tapped into the wider community agreeing with statements emphasizing a healthy attachment to their school and its personnel. Numerous resilience-focused literature support this notion by identifying schools as a mesosystemic resource contributing to resilience for children exposed to adversity (Masten and Reed, 2002; Goldstein and Brooks, 2005; Harvey, 2007; Gentz et al., 2021). Findings from Hetherington and Elmore (2003) corroborate our findings showing that a secure attachment to their school tends to enable children affected by parental divorce to better cope with their new life circumstances. School environments defined by schedules and routines, along with the use of warm and consistent discipline, have been strongly associated with emotional and cognitive adjustment post-parental divorce (Hetherington and Elmore, 2003). Hence, children from unstable family circumstances greatly benefit from supportive school systems, teachers, and coaches (Hetherington and Elmore, 2003). According to a study conducted in Namibia, positive familial and school relationships have a higher influence on the wellbeing of children exposed to adversity such as violence, compared to factors such as individual child characteristics and poverty (Gentz et al., 2021).

Similarly, participants within the final factor (Factor 3) focused on their community, highly ranking statements related to healthy relationships with their grandparents, friends, and friends' parents. This is in unison with the collectivist values present in countries such as Namibia, which emphasize interconnectedness, interdependence, familial relationships, and social conformity (Santos et al., 2017). For example, research in Namibia has indicated the presence of informal systems of child care where extended family systems take over the care of children when they have lost one or both of their parents, either through death or through parental separation, as a deeply embedded practice particularly prevalent in rural areas (Brown et al., 2020). The role of the non-parental adult is also supported by Graber et al. (2016), who found that caring, non-parental adults and mentors play a significant role in promoting resilience among children exposed to parental divorce as they are able to provide children with needed support during this vulnerable period. Furthermore, findings from Akhtar et al. (2017) emphasize the quality of a close relationship between a child and their grandparents, and Sorek (2020) found that a close relationship with a grandparent may even buffer the child if there is parental conflict. In this case, it is a warm and close relationship that is important, and there is not necessarily a need to talk about the parental conflict. Grandparents have the potential to positively influence the overall wellbeing of

children by providing them with an affectionate and supportive environment during a time characterized by emotional turmoil (Akhtar et al., 2017). Rankings by participants who loaded on this factor indicated a strong attachment to their peers as another important protective factor, which supports the increasing focus and importance placed on peer friendships and acceptance that starts to form during middle childhood. Informal social support networks such as relationships with peers provide the necessary communication and support imperative for healthy adjustment amidst parental divorce (Helgeson and Lopez, 2010). The children within this factor grouping did not agree that having a transparent and supportive channel of communication with their parents had been a significant protective factor in their attempts to cope with the divorce. In such instances, Graber et al. (2016) found that caring, non-parental adults and a secure social network equip children with the necessary protective resources to cope with their experiences.

Irrespective of the group/factor, all children across the four factors commonly emphasized a stable, loving familial environment, and frequent visitation with the non-custodial father. This highlights the potential role that regular contact with a non-custodial parent can contribute to children's post-divorce adjustment. This is supported by Lamb et al. (2005) whose research showed that children viewed the loss of regular contact with the non-custodial father as one of the saddest consequences of the divorce and expressed a desire for more time with their father. Indeed, researchers have suggested that the father–child relationship is just as important for emotional and behavioral adjustment as the mother–child relationship (Lowenstein, 2010).

It is imperative that children experience a sense of safety, stability, and peace within their family structure (Turner et al., 2012). Hence, if a divorced family is able to function well and provide and facilitate these core familial tasks, it holds the capacity to buffer against the impact of a reduced standard of living as well as facilitate the necessary emotional and social support in cases where parents need to take on more work and are therefore less physically and emotionally available to the needs of their children (Berger, 2002).

4.1. Practice recommendations

Our findings suggest that intervention strategies focusing on building resilience would be most beneficial if they focused on supporting or enhancing key protective factors. The parent microsystem remains pivotal in promoting resilience capacity in children. In light of this, it remains vital for parents to have access to support systems in the form of therapeutic support, education, family members, and the wider community, as well as access to alternative means of resolving conflict. Parents may receive valuable support from therapy in order to deal with their own sense of grief over the marriage as well as gain some valuable coping strategies and alternative, healthier communication patterns between them as parents. Another valuable avenue of support for parents is access to alternative means of resolving disputes, including the process of mediation and post-divorce counseling. By creating a healthy, productive post-divorce environment characterized by reduced parental conflict, parents can continue to meet the needs of their children more effectively and allow children to feel free to continue building a loving relationship with both parents (Carter, 2002). Furthermore, therapy aimed at challenging views and beliefs about divorce in both parents and their family members might be beneficial in situations where conservative views of divorce cause shame or guilt as well as reduced support from family and other community members. This is inclusive of a cooperative and supportive relationship between the parents with regard to visitations with the father (non-custodial parent), another commonly shared perspective among all participants.

The other two factors with significant loadings encompassed more community resources and reinforced the importance of contact with extended family support systems, schools, peers, and the wider community. These extra-familial individuals can potentially provide a source of stability and safety for children. These findings also point to the importance of ensuring children's time with friends and encouraging them to continue with extracurricular activities. Hence, as a recommendation for practitioners, therapeutic interventions that are directed toward the child, the parents, and the wider social support network will go a long way in promoting the necessary support required to promote healing and resilience (Masten, 2021).

School-based interventions also have the potential to nurture resilience in children exposed to adversity (Cefai et al., 2021). Such school-based resilience-enhancing initiatives are most successful when they encourage connectivity, learning, and are sensitive to diversity (Cefai et al., 2021). Furthermore, parents play a crucial role in promoting resilience within school children; hence, school-based interventions become more effective when supported by complementary home-based interventions (Weare and Nind, 2011). Participation by parents not only reinforces resilience competencies fostered at school but also helps to transfer these competencies into other contexts as well, including the home, peer groups, and the wider community.

Teachers play an integral part in promoting resilience among children coping with adversity such as parental divorce (Theron and Engelbrecht, 2012). Teachers play an active role in promoting positive outcomes among affected children through their daily presence within the child's microsystem, placing them in a favorable position to be able to impact child resilience (Theron and Engelbrecht, 2012). Supportive and caring teachers correlate with positive behavioral adjustment and academic success (Downey, 2008). Caring teachers who adopt an authoritative and consistent style of discipline and communicate and encourage attainable behavioral and scholastic expectations have been found to promote positive adjustment in children coping with parental divorce (Hetherington and Elmore, 2003). However, it is important for teachers to be acknowledged and receive the necessary training and support in order to be better equipped to engage with youth in an attempt to promote resilience amidst exposure to adversity (Theron and Engelbrecht, 2012). Furthermore, it is important for teachers to be sensitized to the contextual uniqueness of resilience in order for them to be able to understand and utilize the coping strategies of each child within their unique context (Theron and Engelbrecht, 2012), especially within a culturally diverse country such as Namibia. Finally, Cefai et al. (2021) emphasized the

importance of ensuring that teachers' interpersonal needs and resilience are addressed in order to enable them to be emotionally, psychologically, and socially able to effectively attend to the social and emotional needs of their students.

4.2. Limitations and future research directions

Together with its contributions, this study has several limitations. The first limitation is the modest sample size and lack of diversity of participants. Only participants from within the Khomas Region in an urban area took part in the research, affecting the generalizability of our findings. Our reliance on a small, less representative sample was in part due to the complexity of obtaining post-divorce and resilient children. In addition, the outbreak of COVID-19 greatly influenced institutions' willingness to participate in the data collection process. A related limitation could be that the emotional impact and social restrictions that accompanied the pandemic may have influenced how the participants sorted the Q-statements, hence influencing the results of the study. Second, this study was conducted cross-sectionally, and that limits the researchers' capacity to adequately explore the complex interaction between the identified protective factors as well as the impact of time and pre-divorce conditions on both the identified protective factors and the children's capacity for resilience.

Future research may benefit from exploring the complex dynamics and resultant impact of siblings and stepparents on children's capacity for resilience. Furthermore, comparing the child's and both parents' perspectives on protective factors might provide significant insight into how these perspectives differ and influence how divorce and parenting are handled. The findings of this study should be corroborated by similar studies, in future, including longitudinal, pre–post-divorce studies in order to be able to assess the impact of circumstances before the divorce on children's post-divorce adjustment and their capacity for resilience.

5. Conclusion

Though divorce will continue to be a traumatic life transition for many Namibian children, it is evident that children have the potential to adjust and even thrive after such an experience provided that individual protective factors are present and they have access to valuable support, cohesion, and routine from both their family and the wider community. Furthermore, very little resilience research in general exists within the Namibian context. Such studies challenge the continued supremacy of Western research concerning resilience to decolonize knowledge surrounding this construct, and remove discourses that privilege a certain socioeconomic profile (Ungar, 2008), and recognize cultural practices and processes that may nurture resilience within unique contexts (Masten, 2021). Previous multi-country studies have found that resilience protective factors tend to be universal; their ranking in importance, their expression, and how they are used remain highly contextual and culture-specific (Grotberg, 1995; Gunnestad, 2006). For example, in African contexts, there seems to be a strong link between resilience, culture, and religion (Theron and Theron, 2010). Theron et al. (2013) went on to explain that the traditional African value of Ubuntu remains an imperative component of resilience from an Afrocentric perspective. Ubuntu refers to a collective way of living where an individual exists as part of the larger community. Values embedded in this concept include hospitality and mutual aid. Another typical value embedded within African families is interdependence among extended family members, which remains instrumental in nurturing resilience among African families (Dass-Brailsford, 2005). Evident in this study is the strong reliance on the community, including schools and peers as well as extended family members; however, open communication with parents is not as prominent as suggested by research from other contexts.

This study is also among the few that incorporated Q-Methodology in exploring the perspectives of children on positive factors that nurture their resilience amidst a parental divorce. It adds to the increasing literature recommending that children can be important actors in reflecting and reporting on their own lives (Ben-Arieh, 2005), including those from divorced families (Sorek, 2020).

Our findings emphasized the notion that resilience is not inherent to certain individuals and absent in others but rather involves thoughts, actions, and environmental resources that can be developed and utilized by anyone, even children (American Psychological Association, 2002). Furthermore, the findings highlighted the ecological nature of resilience by proving that the capacity for resilience depends on multiple systems and resources not only within the individual but also within their significant relationships with other systems within their unique environment (Masten, 2021). Family structure is indeed influential, but the most impactful characteristic of a family is how each member cares for the other (Turner et al., 2012). A well-functioning family structure exhibits the ability to meet specific needs presented during middle childhood. Among these are physical needs, such as food and shelter, and the need for positive peer and non-parental adult relationships; this is aided by parents choosing a good school and neighborhood and allowing frequent visitation with grandparents, friends, and the non-custodial parent.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by University of Namibia Research and Ethics Committee. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

JV is the lead author, conceptualized the study, wrote the introduction, the method, and the results and discussion, and conducted the analysis with SG. SG conceptualized the study, wrote the introduction, the method, and the results and discussion with JV. All authors contributed to the manuscript and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Resilience anchors for children in an out-of-home care institution during and after COVID-19

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Growing numbers of children of all ages grow up in out-of-home care institutions due to personal and socioecological risk variables that destabilized their families of origin. In the aftermath of the COVID-19 pandemic which disrupted lives and development, there is particular interest in how children who grow up in out-of-home care institutions cope and develop. This paper reports the findings of a study that sought to document anchors of resilience in children who resided in a care institution run by a non-governmental, church-based welfare organization in one of the central provinces of South Africa. In line with recent developments in childcare, the organization mainly functions *via* smaller child and youth group homes across the province (compared to bigger children's homes in the past). In our qualitative, phenomenological study, we used the participatory, child-friendly, and less intrusive draw-and-write technique to generate data. We asked the 20 participating children of one of these group homes to make drawings that mirror their lives, and to write paragraphs in which they described their drawings. All were school-going children in care, aged from 12 to 19. There were 11 girls and 9 boys in the study, and one of these identified as "other." The grades ranged from 7 to 12 and they spoke African languages, namely Afrikaans, Sesotho, Setswana and IsiXhosa. We used inductive content analysis to process the data, and the findings indicate that, notwithstanding personal and socioecological risks during and after the COVID-19 pandemic, the resilience of the participants was anchored by a number of universal personal strengths as well as socioecological resources.

KEYWORDS

COVID-19, multisystemic interventions, out-of-home care, resilience, resilience resources, resilience risks, social ecology of resilience theory

Introduction

Considerable numbers of at-risk children who hail from families where risks abound grow up in residential, out-of-home care institutions worldwide (Mayer, 2019, p. 550; UNICEF, 2021). The reasons for this phenomenon range from personal to socioecological risks that impair holistic development in children. However, it should be noted that sometimes, complex combinations of these personal and socioecological risks account for poor developmental outcomes in children at risk. Well-known examples of these risks are traumatic occurrences such as neglect, and physical, sexual, and psychological abuse, often by the hands of parents or legally responsible caregivers (Leve et al., 2012, p. 1,197; Vandervort et al., 2012, p. 1). Extremes of poverty and family instability account for a significant percentage of children in out-of-home care contexts (Malindi and Molahlehi, 2020, p. 281). Furthermore, overwhelming natural occurrences such as pandemics, earthquakes, floods and manmade disasters such as veldfires and wars disrupt families and child development, causing especially orphans, to subsist in out-of-home care institutions or temporarily established camps.

It is accepted that children thrive and cope resiliently in contexts where there is stability, an established routine, certainty, access to adequate housing, nutrition, medical care, and secure relationships with adults, as well as quality learning opportunities (Sandstrom and Huerta, 2013, p. 4). Any significant instability in the early years may negatively impact child development and the capacity to cope adaptively in the context of such risk. The recent COVID-19 pandemic, which was an overwhelming natural disaster, created much instability, fear, anxiety and uncertainty in the lives of young people worldwide (Ganie and Mukhter, 2020, p. 80), including those in care institutions. Therefore, the question that interested us as authors was how children in care settings cope(d) adaptively during and after the pandemic.

It is important to note that for some time, there has been renewed interest in the resilience of children who have experienced natural and other manmade disasters (Masten, 2014, p. 6). In this regard the capacity of young people at risk to cope adaptively in the context of the COVID-19 pandemic became a node of interest. Researchers and mental health practitioners have become interested in how young people navigated their pathways through natural disasters. Perspectives on the constellation of protective resources and services that anchored the resilience of these young people who were at risk of poor developmental outcomes, were and are explored.

A number of studies have examined adaptive coping in children in their families of origin who were affected by the COVID-19 pandemic. In the context of the COVID-19 pandemic it was discovered that children exhibited fear, experienced problems with online learning, a deterioration in physical and mental health, reduced physical activity, and demonstrated an increased interest in gadgets and body weight (Shmatova and Razvarina, 2022, p. 140). Other researchers noted that children demonstrated negative affect and behavior, and experienced episodes of neglect or abuse, isolation, boredom, lack of free outdoor play and poverty (Ganie and Mukhter, 2020, p. 80).

Children in care institutions were perhaps in more difficult circumstances, since the abrupt changes brought about by the pandemic added to the changes they had already experienced in their lives. As Treier et al. (2022, p. 951) noted, at-risk children with affective dysregulation and those in out-of-home care contexts exhibited elevated reactivity to stressors and maladaptive emotional regulation coping strategies. This is indicative of vulnerability. It is accepted that early life experiences tend to shape development and learning in children (Sandstrom and Huerta, 2013, p. 4). It should be borne in mind that children in care institutions have histories of early life trauma and instability. To this the COVID-19 pandemic added a layer of risk in those children who were already in a vulnerable position in care institutions.

While it is accepted that the COVID-19 pandemic negatively influenced psychological development in some learners, others demonstrated the capacity to remain resilient in the context of risk and adversity posed by the pandemic (Panzeri et al., 2021, p. 17). In South Africa, it would be important for researchers to purposefully examine how the COVID-19 pandemic impacted development and resilience in children in out-of-home care institutions and document the resilience anchors that enable(d) them to cope resiliently. This served as motivation for this study.

The resilience phenomenon in youth in out-of-home care settings—internationally and in South Africa

Resilience researchers acknowledge that the resilience phenomenon is characterized by ambiguity and not easy to define since it is complex and influenced by the context (Dass-Brailsford, 2005, p. 575; Ungar, 2011, p. 1). However, there is consensus that resilience depends strongly on personal and socioecological factors inside and around the youth at risk (Ungar, 2005, p. 429; Ungar, 2011, p. 1). In other words, there is consensus that positive adjustment in youth at risk depends on reciprocal, dynamic, contextually influenced bi-directional interactions between them and their social and physical ecologies (Theron and Donald, 2013, p. 61). Young people at risk depend on personal strengths and active support systems such as families, schools, and peers to cope adaptively in the context of risk and adversity (Theron and Donald, 2013, p. 58). Young people should have access to multiple resources from multiple systems to cope adaptively (Theron et al., 2022, p. 7). In other words, young people develop resilience in the context of risk if they receive support from schools, families and their communities (Ungar et al., 2019, p. 616–617). Contextual realities therefore mold the capacity to cope resiliently in youth at risk in depressed contexts (Theron, 2015, p. 635–636). However, for young people in youth care settings, support systems are often not adequate.

They typically have histories of traumatic experiences, are homeless and hail from unstable homes where resources such as food are compromised. Care institutions are seen as an alternative, safe havens for vulnerable youth since they cater for the basic needs of orphans and homeless, at-risk children, who typically have histories of physical, sexual, emotional, and psychological abuse and neglect (Leve et al., 2012, p. 1,197). However, there are differing views as to whether out-of-home care institutions serve as what Theron and Engelbrecht (2012, p. 265) call *microsystemic strongholds* for children who are at risk of poor developmental outcomes.

Some researchers express a rather pessimistic view of care institutions' potential to serve as safe havens for at risk children and youth to enable adaptive coping. Taylor et al. (2018, p. 83) argue that although children growing up in residential care institutions cope resiliently because of personal strengths such as future focus and motivation and interpersonal relationships, they are still more vulnerable compared to their at-risk peers who grow up in their own homes.

In a South African study, Hlungwani and Van Breda (2022, p. 147) noted that care institutions are typically restrictive by nature, and thus fail to fully prepare young people for life post-care. They argue that some of the children who exit care at maturity often struggle to cope adaptively in the wider, more open society. However, according to Farmer et al. (2021, p. 1), many young people who exit care demonstrate resilience despite the risk and adversity they had previously experienced. A view is also expressed that some of the children in care institutions are at risk of maltreatment, often with deleterious mental health consequences (Gusler et al., 2020, p. 455). Mayer (2019, p. 550) emphasizes that exposure to trauma, acute or chronic, can be damaging to young children's development.

According to Huffhines et al. (2020, p 439) children in care institutions who experience maltreatment exhibit internalizing and externalizing problems and experience more psychiatric

hospitalizations. Despite this, some researchers noted that children in care institutions demonstrated the capacity to remain resilient in the context of maltreatment, notwithstanding the risks and shortcomings referred to above.

In a study that examined thought problems and aggression among children in out-of-home care, Farley et al. (2022, p. 795) found that placement in care institutions provided a structure that reduced the incidence of aggression in children. This strengthens the view that children require structure and a measure of predictability in their lives to develop normatively (Varelas et al., 2015, p. 517). Another study found that when youth in care institutions had positive relationships with caseworkers, they attained positive emotional, behavioral and cognitive school engagement outcomes (Jaramillo and Kothari, 2022, p. 399).

School engagement was found to be potent in promoting resilience in children with street life experiences in a care institution in South Africa (Malindi and Machenjedze, 2012, p. 77; Theron et al., 2022, p. 1). School engagement extends opportunities to children in care to build social competencies, participate in learning activities and develop meaningful social connections with peers and teachers that enable resilience (Kothari et al., 2020, p. 914).

Thomas et al. (2022, p. 61) noted that resilience among children in an out-of-home care institution in Kerala, India was anchored in positive relationships among the children at the shelter. Such relationships foster a sense of belonging, an important factor of resilience. Another study in the UK confirmed the importance of a resilience-promoting environment and emotionally supportive networks in promoting resilience among children in out-of-home care institutions (Furey and Harries-Evans 2021, p. 404).

Youth who are weaned from institutional care and transition from dependence to independence require adequate mentoring to be able to cope resiliently in the wider outside world (Sulimani-Aidan et al., 2019, p. 345). A South African study that looked at the resilience of girls leaving a care institution showed that they remained resilient because they readily embraced motherhood (and related responsibilities), faith and an attitude of gratitude for the care they received in the care institution (Hlungwani and van Breda 2020, p. 918). In this regard, Gusler et al. (2020, p. 455) advise that it would be important for researchers to examine the processes that enable some of the children in care institutions to remain resilient despite maltreatment. This will allow for context-specific interventions to be developed to ameliorate the plight of children at risk of poor developmental outcomes.

Our theoretical perspective on resilience

We view youth resilience through the lens of Social Ecology of Resilience Theory (SERT) of Ungar (2011). This theory consists of four basic principles, namely decentrality, complexity, atypicality and cultural relativity (Ungar, 2011, p. 4). In line with the principle of decentrality, young people should be decentered when we seek evidence of resilience (Ungar, 2011, p. 4). This implies that the role of social ecologies, consisting of families, schools and communities in determining adaptive coping in youth at risk should be recognized (Ungar, 2012, p. 17). With regard to the principle of complexity, Ungar argues that risks, resilience resources and resilience are complex processes that deter us from confidently predicting children's developmental trajectories. Individual attributes or strengths potentiate resilience; however, these attributes combine in complex ways with resources sourced from social and physical ecologies to enable adaptive coping in young people at risk (Panter-Brick and Eggerman, 2012, p. 369; Ungar, 2012, p. 17).

The SERT's third principle is atypicality. Young people sometimes use atypical ways to cope in the context of risk (Ungar, 2011, p. 7–8). This is reminiscent of hidden resilience, noted in young people with street life experiences in a South African care institution (Malindi and Theron, 2010, p. 324). These young people vandalized payphones to obtain money and teased one another—aligned with hidden resilience where resilient behaviors are not always viewed as constructive.

Through the principle of cultural relativity, SERT demonstrates how culture can enable or compromise resilient coping in young people at risk (Panter-Brick and Eggerman, 2012, p. 369; Sugawara et al., 2021, p. 2; Ungar, 2011, p. 8). This implies that resilience is nuanced by culture.

Based on our focus of interest, a discussion of the phenomenon of resilience and the theoretical perspective of SERT, our purpose and research question were refined.

The purpose and research question of the study

Our purpose was to determine which resilience anchors helped youth in an out-of-home care setting to cope adaptively when confronted with the COVID-19 pandemic.

Our research question therefore was: *Which resilience anchors did youth in a South African care setting utilize to cope adaptively while facing the COVID-19 pandemic and its aftermath?*

Methodology

There has been a call that young people be studied directly through methodologies that take their levels of development into account (Driessnack, 2005, p. 415; Malindi and Molahlehi, 2020, p. 299). In this study, we heeded that call and selected the approach that would be suitable for the participants in our study. We adopted a qualitative research approach and used the draw-and-write technique to generate data. The feasibility of this technique to generate data with traumatized children was established with orphans in a care institution (Machenjedze et al., 2019, p. 72).

Our study involved 20 children in a group home care institution who volunteered to take part in the research. Consent was obtained from the non-governmental organization as well as the house parents of the group home. Before visiting the setting, we sent a detailed research letter as well as assent forms to the parents. Assent from the volunteer participants was obtained by the house parents. There were 11 girls and 9 boys in the sample, one of whom identified as "other." The participants spoke the dominant African languages in the area, namely Afrikaans ($N = 13$), Sesotho ($N = 3$), Setswana ($N = 2$), and IsiXhosa ($N = 2$). All the participants confessed to being Christians, were in school and in grades ranging from 7 to 12 and they were aged from 12 to 19. We did not ask for confidential demographic data such as personal and family history—in line with

the South African Protection of Personal Information Act 4 of 2013. This data would have been helpful but was not the primary focus of the study.

As primary researcher I presented the drawing brief, and pens to the participants. According to the instructions on the brief, they had to make a drawing of what enabled them to cope with their lives during and after COVID-19—and to write a paragraph in which they described their drawings. They were allowed to write their narratives in any language of their choice. I met the participants in the afternoon after they had returned from school. The house parents shared the contents of the research letter with the participants prior to my arrival—and therefore they had a good idea of what they would be expected to do. I, however, read the letter and instructions once again to ensure certainty, and to respond to any uncertainties they may have had. I asked the participants to give themselves nicknames, which they wrote on the drawing brief, to protect their privacy. The drawing and writing session took approximately 40 minutes. I received the drawing briefs back and provided each participant with a snack pack to thank them for their participation.

Subsequent to the field visit, we processed the data through content analysis. This was done through studying the drawings and reading the descriptions of the drawings several times to gain an optimal understanding of these. Unfortunately, we could not verify our interpretations with the participants, but the secondary researcher served as relatively independent verifier based on his absence during the field work—with the advantage of decoding the data without prejudice. Below, we present the drawings of a better quality and the narratives that describe them. The narratives were not language edited and those that were written in Afrikaans have been translated. Participants with other African home languages wrote their narratives in English.

Some remarks about our positionality as researchers are appropriate at this stage. Both of us work in the School of Psychosocial Education of the Faculty of Education at the North-West University in South Africa and have come a long way together as colleagues. Both of us spent some time in the province where the research was done. The primary researcher speaks isiZulu with a keen interest in resilience and the secondary researcher speaks Afrikaans with a keen interest in education support services within inclusive education. Both of us prefer qualitative investigations where in-depth and rich narratives of participants can be extracted through an interpretivist lens. Both of us operate in the broader fields of educational psychology and learner support—with a belief that the experiences and words of participants should be heard clearly.

Findings

A general finding that came to the fore is that the participants remained resilient in the context of risk through a constellation of personal and socioecological resilience resources. In this regard, Nola, a 19-year-old participant in Grade 11, who identified as "other," made a drawing of a mobile phone. The participant wrote the following words on the drawing: *WhatsApp, Facebook, music, TikTok, Soccer, and friends*. The participant then added a human figure lying on a bed (Figure 1).

The participant thereafter wrote the following narrative:

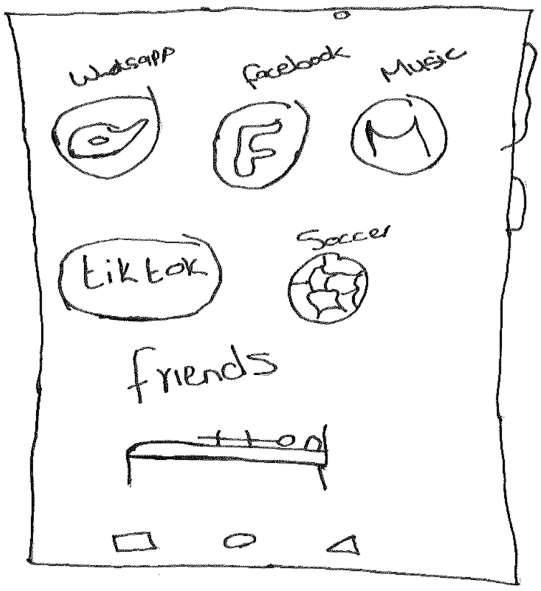

FIGURE 1
Drawing by Nola.

> *I drew a cell phone because social media helps me to be strong, during the times where I feel alone. I often read motivational quotes, I write songs and love singing when I feel weak or sad, music helps acts as an escape from reality, my family, and the pain they went through which often leads me to Facebook to search for them when I cannot reach them. Social media helps me to communicate with my friend whom I can trust and talk to about what hurts me, sleeping is also my escape from reality I often sleep when I do not feel alright, playing soccer with my friends helps to ease my mind and lastly my girlfriend also helps me quite a lot when I am at my lowest.*

The narrative shows that on a personal level, Nola coped adaptively through *social media* when he felt alone. It is important to note that the participant tried to connect to his family through Facebook. Social media enabled the participant to communicate with peers about painful moments and thus benefit from social capital. Additionally, on a socioecological level, his *girlfriend provided social support* when it was needed. Earlier studies demonstrated that, in the context of disasters, social media was used effectively to enable social support and a sense of belonging (Dufty, 2012, p. 40; Jurgens and Helsloot, 2017, p. 79; Mano, 2020, p. 460; Senekal et al., 2022, p. 10–11). The participant *read motivational quotations* and used his talent for *writing songs and singing* when he felt weak or sad. It is noteworthy that the participant escaped from their painful reality through *sleeping* and *music*. Another study found that sleep enables one to recover from, adapt or resist a stressful event (Guida et al., 2023, p. 3). While a study by Kegelaers et al. (2021, p. 1,279) shows that professional musicians and music students exhibited mental health issues such as depression and anxiety, a study by Rosenberg et al. (2021, p. 6) shows that listening to music enabled posttraumatic resilience.

Lexy, a 15-year-old girl in Grade 9 made a drawing with an open book, a dog and two human figures holding hands. Between the two human figures is a drawing of a heart (Figure 2).

Lexy wrote a narrative in which she described her drawing:

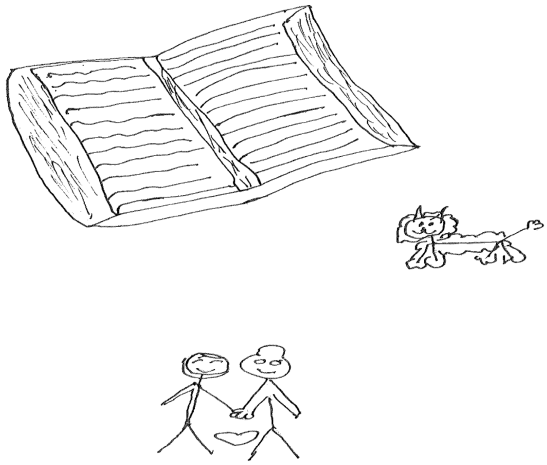

FIGURE 2
Drawing by Lexy.

> *As ek boeke lees maak dit my baie gelukkig, want ek leer nuwe lese uit die stories*. [When I read books, I feel good, because I learn new lessons from the stories]. *Ek is lief vir mense en diere; dit maak my ook gelukkig*. [I love people and animals; this also makes me happy].

The narrative shows that, on a personal level, Lexy coped resiliently because of the stories she read in books and the lessons she gained from there. Tovey (2021, p. 8) argues that when children are encouraged to read stories, they stand a better chance of understanding themselves and personal and ecological resources needed to overcome adversity. Her *love for people and animals* made her feel happy too, and this probably fed her resilience. Thompson et al. (2014, p. 215) found that animals were important in enabling resilience among vulnerable people in the context of disaster. However, Applebaum et al. (2021, p. 2) found that human-animal bonds can sometimes complicate the experience of adversity in vulnerable groups.

Kaylina, a 15-year-old girl in Grade 10 made a drawing of a book and labeled it, "*Leer*" [learning], a book labeled, "*Bybel*" [Bible], a human figure standing on its own and a group of numerous female human figures, labeled as "*familie*" or [family]. Kaylina wrote the following statement to describe her drawing:

> *Om te leer en nie aan die slegte goed te kyk nie en om in beter verhoudings te wees.*/[Learning and not focusing on negative events and to be in better relationships].

The above statement shows that on a personal level, the participant coped by *concentrating on studying* and *trying not to focus on negative events* in her life. Modi and Singh (2021)noted the positive thinking enabled resilience in the context of adversity. She also benefitted from having *positive social relationships* on a socioecological level. Although social support has been found to be protective in youth at risk, it was found to be protective in youth experiencing violence in a South African study by Sui et al. (2022, p. 11).

Another participant, Kay-Kay, a 17-year-old girl in grade 11 made a drawing showing two human figures labelled *sister and mother*, a house labelled "*my home*", musical notes, and a male human figure, labelled "*male friend*". (Figure 3).

Kay-Kay wrote the following paragraph to describe her drawing:

> *I feel strong when I am with my sister and mother, they are the source of my strength because when I am sad they give me advice and help me cope through the difficult times, they always make me understand that everything in life happens in life for a reason. Music is also one of the things that make me feel strong because I mostly listen to gospel, I find healing, in some songs I get messages that make me feel better. My male friend is always there for and advice and makes me feel better, my house is also where I get my power from, the reason being is this is where I get space to read my bible and ask God to get me through.*

On a personal level, the participant *listened to gospel music* to feel better, and appreciated the fact that she had a safe place where she could *read her Bible and pray*. Therefore, *having faith* enabled her to cope resiliently on a personal level. A similar finding was made in a study by Ilyashenko et al. (2021, p. 5). In this regard, Ilashenko et al. (2021, p. 5) found that religiosity, religious beliefs and prayer enabled people to calm down in the context of COVID-19. In another study, Gunnestad and Thwala (2011, p. 169) found that children in southern Africa (Zambia and Eswatini) spontaneously mentioned having a religion as a protective factor that enabled their resilience. However, they noted that religiosity rendered some vulnerable to poor developmental outcomes in crisis situations. On a socioecological level, the paragraph shows that the participant coped with difficulties since her *mother and sister were her source of strength*. They made her understand that things happen for a reason. Furthermore, she received *support from her male friend*.

Amogelang, an 18-year-old girl in grade 12, made a drawing of a netball court, decorated with flowers (Figure 4).

Amogelang then wrote the following paragraph:

> *Ek het 'n netbal baan geteken* [I have drawn a netball court]. *Ek wil graag eendag n juffrou wees om kinders netbal te leer* [I would like to become a teacher one day, so that I can teach children netball]. *Dit it sal my ook gelukkig maak as hulle ook eendag groot is en ander kinders netbal leer* [I shall be glad if they could grow up and teach other children netball]. *As die kinders nie wil leer nie, sal ek hulle nie forseer nie, om hulle lief te hê, en hulle nie seermaak nie* [If the children do not wish to learn, I shall not force them, so that I do not hurt them].

The paragraph shows that on a personal level, Amogelang coped resiliently due to personal strengths such as *optimism* and *future focus*. She was optimistic that she would become a teacher in future. This served as motivation to her. Optimism has been found to mediate the impact of COVID-19 related stress on loss of hope (Sorrenti et al. 2022, p. 5,496).

Gabriella, a 17-year-old girl in grade 11 made a drawing of a human figure with headphones above her head. She added the drawing of a book and sweets (Figure 5).

Gabriella said in her narrative:

> *Firstly, I drew sweets because when I feel stressed I tend to eat a lot of sweets, I drew earphones because I listen to music when I am sad and angry, it helps to calm me down. The person I drew represents my family, they are the reason why I am fighting. I have so much hope and I love them so much because every day when I wake up I do it for them because they need me and I do it because I want to achieve my goal and to make my mother proud, the book is for the*

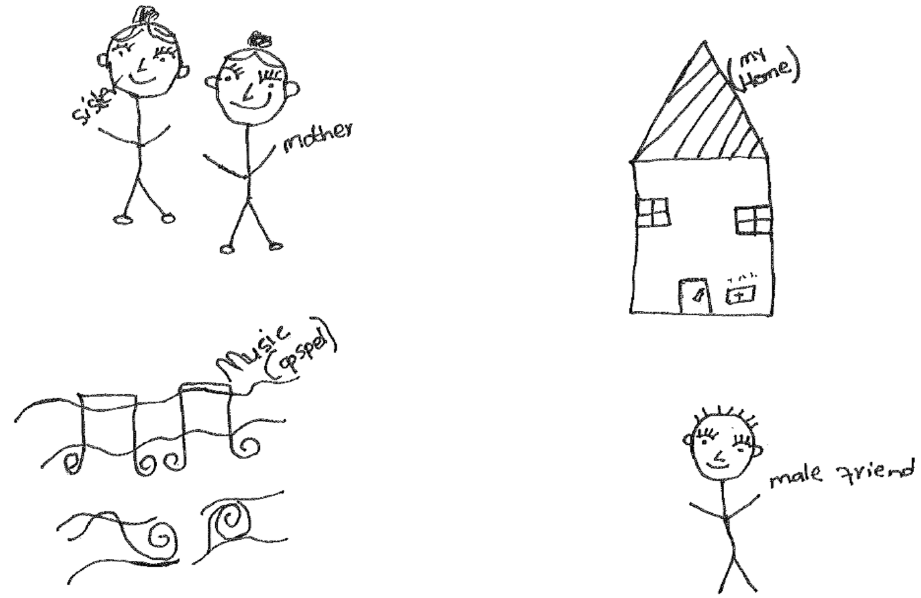

FIGURE 3
Drawing by Kay-Kay.

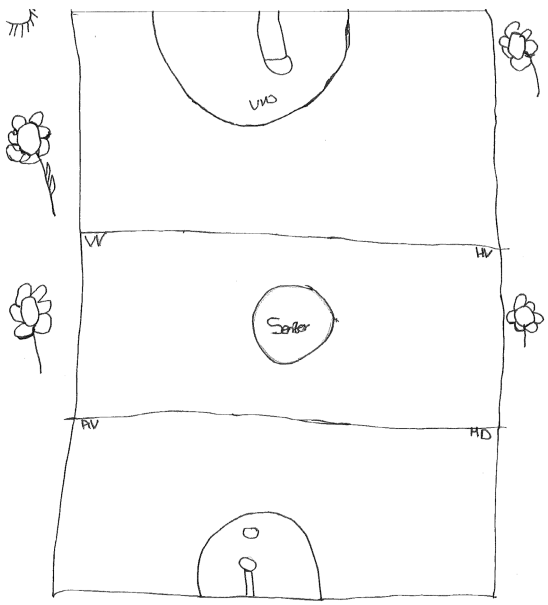

FIGURE 4
Drawing by Amogelang.

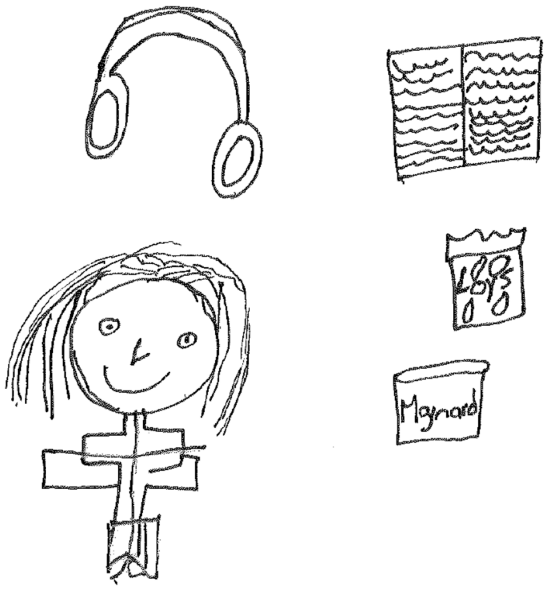

FIGURE 5
Drawing by Gabriella.

> *Bible because when I pray and read the bible I feel that I have a lot of strength and everything, but I do it for them, When they look at me they should feel a sense of strength and I want to change my home situation, thanks for inviting me.*

The paragraph above shows that on a personal level, Gabriella remained resilient because of personal strengths such as *comfort eating* of sweets, *listening to music* to calm down, *having hope*, *reading the Bible, and praying*. On the socioecological level, Gabriella benefitted from meaningful *connections to her family* and the *desire to succeed* to make them proud. It is important to note that comfort eating has been found to be one of the outcomes of emotional stress related to COVID-19 (Salazar-Fernández et al., 2021, p. 1).

Beauty, a 12-year-old girl in grade 7 made a drawing of two human figures holding hands. In between them, she made a drawing of a heart (Figure 6).

Beauty wrote the following paragraph:

> *My family helps me to be strong at any time and help me to cope or the caretaker gives me some more advice, I've drawn my family and my caretaker, and I'd like to thank Mr. Malindi [one of the researchers] for helping me with this situation and I'd also like to thank Mme XXX [name withheld] for giving me advise.*

On a personal level, the paragraph shows that Beauty had an *attitude of gratefulness*, that has been found to enhance resilience. Gratitude before the pandemic promoted well-being in the midst of the COVID-19 pandemic (Kumar et al., 2022). The above paragraph shows that on a socioecological level, Beauty coped adaptively due to her *family*, and the *caretaker who served as an active support system*. The family made her strong and helped her cope while the caretaker, whose name is withheld gave her useful advice.

Paulinah, a 17-year-old girl in grade 10 made her drawing that shows a human figure sitting on a chair with arms outstretched. There is a circle above the human figure with the word, "me" inside (Figure 7).

Paulinah wrote the following paragraph:

> *I drew myself, when I am imagining in class, sometimes I like to feel lonely but some other times I feel like it's a good thing for me to be alone. It gives people the peace that they need and the important thing is that it helps me a lot to be alone and think.*

The paragraph shows that on a personal level, Paulinah might be *at risk and psychosocially vulnerable*, as she is intentionally withdrawing socially from peers and teachers. However, she might be an introverted person, which is a personality orientation and not necessarily a risk factor.

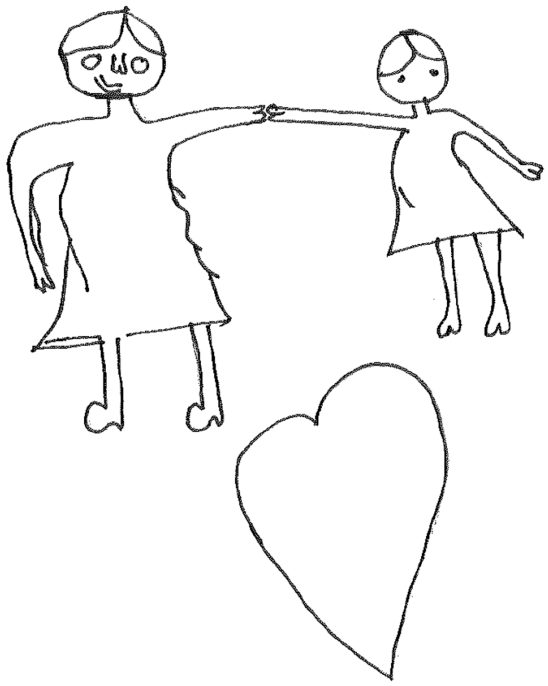

FIGURE 6
Drawing by Beauty.

Another participant, namely Martha, a 14-year-old girl in grade 7 made a drawing of a male and a female human figure, labeled "*mother*" and "*father*." Martha said in her paragraph:

> *I've drawn my mother and father because my family helps me feel strong, they make me feel very happy and I love them with my whole heart and I wish I was with them, the Bible also makes me happy I always pray that God helps me, I love reading the Bible and praying every day to gain strength.*

Clearly, the above paragraph shows that on a personal level, Martha *had faith* that enabled her to cope resiliently. She *read the Bible and prayed* to obtain strength. On the socioecological level, Martha remained resilient because she had *connections to her parents*, although she was not residing with them.

Mpee, a 17-year-old girl in grade 10 made a drawing of two human figures standing side by side. Mpee wrote the following paragraph:

> *I have drawn a picture of my two caregivers, they really inspire me with many things, I would like to thank Mr XXX* [name withheld] *for the role of a father to me, thank you Daddy I really appreciate it and it means a lot to me, I'd also like to thank Miss XXX* [name withheld] *in many ways because when I am sad she is the one person who is there for me when I feel like the world has turned against me, she would tell me that she is there for me so thank you mommy I love you a lot and I will always do.*

On a personal level Mpee remained resilient because she *loved her caregivers* and had an *attitude of gratefulness*. The paragraph above shows that Mpee, on a socioecological level, had an *active support system comprising caregivers*.

Peaches, an 18-year-old boy in grade 12, made a drawing of three human figures and labeled them, "*people*," the head of a dog, labeled "*dog*" and a book labeled, "*Bible*." At the top of the drawing, there is a musical note, labeled, "*musiek note*," meaning musical notes in English (Figure 8).

Peaches then wrote the following paragraph:

> *Music is something beautiful, music makes me forget and gives me motivation and strength it relaxes and calms me, my friends and family support me they give me strength to keep fighting they always stand up for me, my dog's barking makes me smile and gives me joy with that joy I can face another day. The bible, most of all I pray to God from straight above I talk to him and worship him, that how I fight through the hard days.*

On a personal level, *listening to music* enables him to forget his pain and be motivated, relaxed, and calm. *Religiosity* plays a role in enabling his resilience since he *prays, worships God*, and overcomes hardship. Peaches draws strength from his *friends and family*. It is interesting to note that his *dog has been integrated into his social ecology* and its barking gives the participant joy to face another day.

Zahn, a 19-year-old girl in grade 12 made a drawing showing a book labeled "*God en Bybel*" [Bible in English], a female human figure labeled "*Ouma*" [grandmother], a mobile phone with numbers labeled, "*Foon*" [Phone], an animal labeled, "*Hond*" [Dog], a bird labeled "*Voël*" [Bird], a human figure labeled "*boyfriend*" and two human figure heads (Figure 9).

FIGURE 7
Drawing by Paulinah.

Zahn wrote the following paragraph:

> *My God, want ek kan met hom praat en hy lig my op en hy antwoord mense se gebed* [My God, because I can talk to Him, and He lifts me up and He answers people's prayers]. *My ouma, sy leer my hoe om vrou te wees. Sy moedig my aan* [My grandmother. She teaches me how to become a woman. She encourages me]. *My diere is my vriende en familie hulle liefde vir my.* [My animals are my friends and family, their love for me]. *Ook, my kêrel, hy ondersteun my* [My boyfriend too, he stands by me]. *My foon en musiek and kontak met my vriende* [My phone and music and contact with my friends]. *My gesin veral my sussie help my om sterk te staan* [My family, especially my sister; she helps me to stand strong].

On a personal level, Zahn coped by *listening to music* on her mobile phone. On the socioecological level, the participant had the benefit of social capital sourced from her *family, sister, friends, and boyfriend*. She *enjoyed her animals* too and considers them as friends.

Maugdoza, an 18-year-old boy in grade 11 made a drawing of gym equipment. Maugdoza then said below:

> *Ek hou van gym, om gesond te wees, om slegte goed te vergeet, en vir my elke dag is n nuwe dag* [I enjoy the gym, to be healthy, to forget negative things and for me every day is a new day].

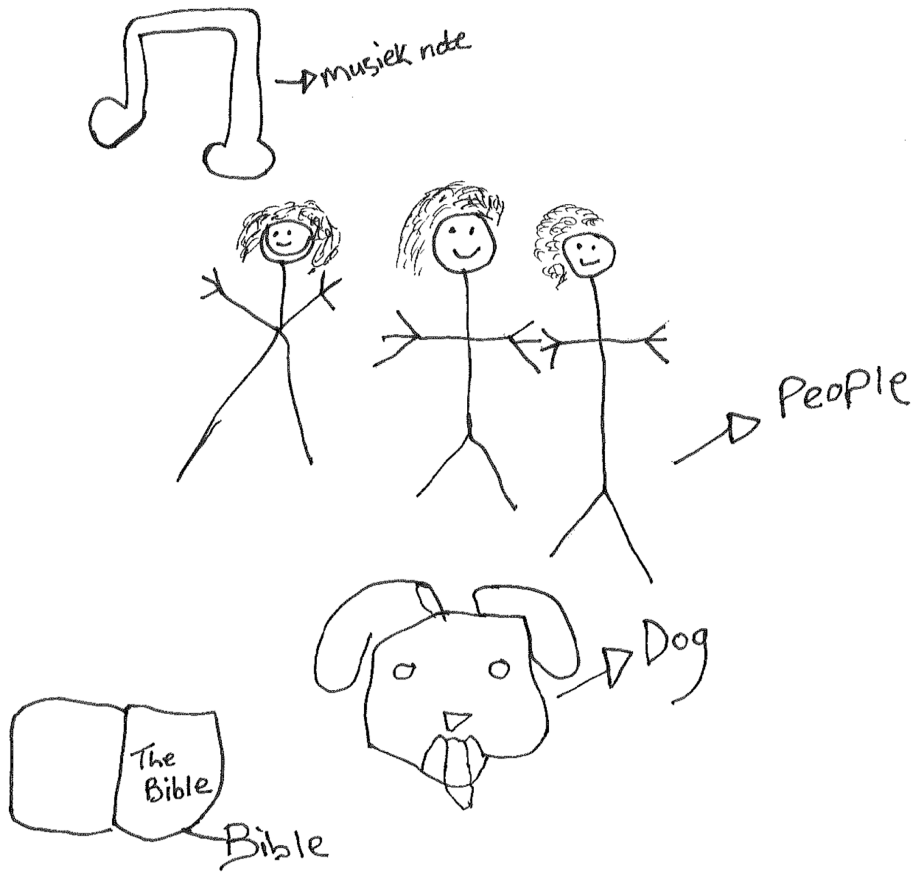

FIGURE 8
Drawing by Peaches.

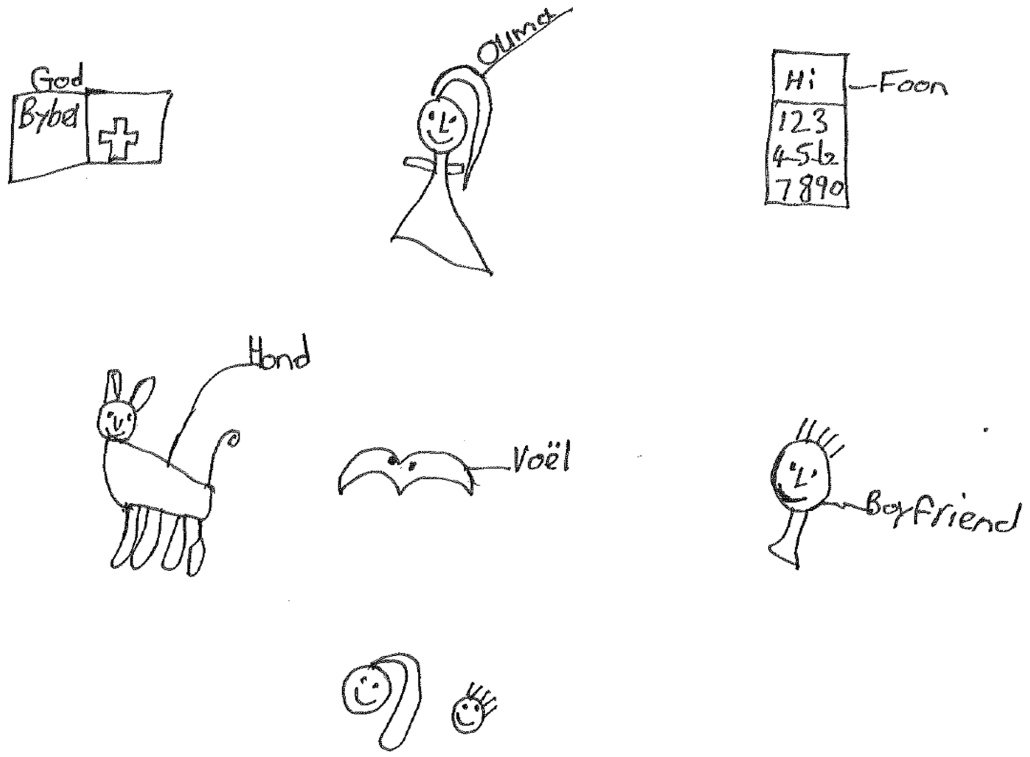

FIGURE 9
Drawing by Zahn.

The statement above shows that on a personal level, Maugdoza coped by spending *time in the gym* to divert his thoughts from negative events and maintain health. He sees every day as new day. Researchers such as Lancaster and Callaghan (2022, p. 1) discovered that physical exercise promoted resilience during the COVID-19 pandemic.

The Rock, a 19-year-old boy in grade 11, made a drawing with 4 human figures, a radio and gym equipment too (Figure 10).

The Rock then wrote the following:

> *Wat my help om te cope en deur my gevoelens en myself te werk, is musiek* [What helps me to cope and work through my emotions is music]. *Dit maak my lewe bietjie maklik net deur oefen in die gym en musiek luister* [What makes my life easy is working out in the gym and listening to music].

The Rock coped on a personal level through *working out in the gym* and *listening to music*. As he pointed, the gym and working out made his life easier.

Tumi, a 17-year-old boy made a drawing of a face mask. He wrote "*No mask*; *no entry*" on it. Tumi then wrote the following statement:

> *I drew a mask because it helped me not to spread the virus to other people.*

The statement shows that Tumi relied on *his face mask* to avoid infection and spreading the COVID-19 virus.

Hloni, a 16-year-old boy in grade 11 made a drawing of a male human figure standing next to a chair. A bubble above its head has the word, "Plan!!" inside (Figure 11).

Hloni wrote the following:

> *The person in my drawing is my uncle he is the one who makes me happy and is always by my side, he always told me to make a plan whenever I'm in a difficult situation.*

The above statement shows that Hloni remained resilient in the context of risk because his *uncle was always there to support* him. His uncle advised him to *"make a plan"* when he faced a difficult situation.

Jagghlik, an 18-year-old boy made a drawing of a mobile phone (Figure 12).

Jagghlik wrote the following:

> *Wat my laat by hou in die lewe is wanneer ek meer met my foon speel sodat ek net kan vergeet wat in my lewe aangaan en net meer probleme en stress vir minder en nie onder depressive lei nie* [What helps me to hold on in life, is when I play with my mobile phone, so that I can forget what is going on in my life, and just more problems and stress to decrease so that it does not lead to depression].

Jagghlik used his *mobile phone* as a diversion and a tool to connect to others and cope on a personal level. This he did to reduce problems and stress, to avoid the onset of depression.

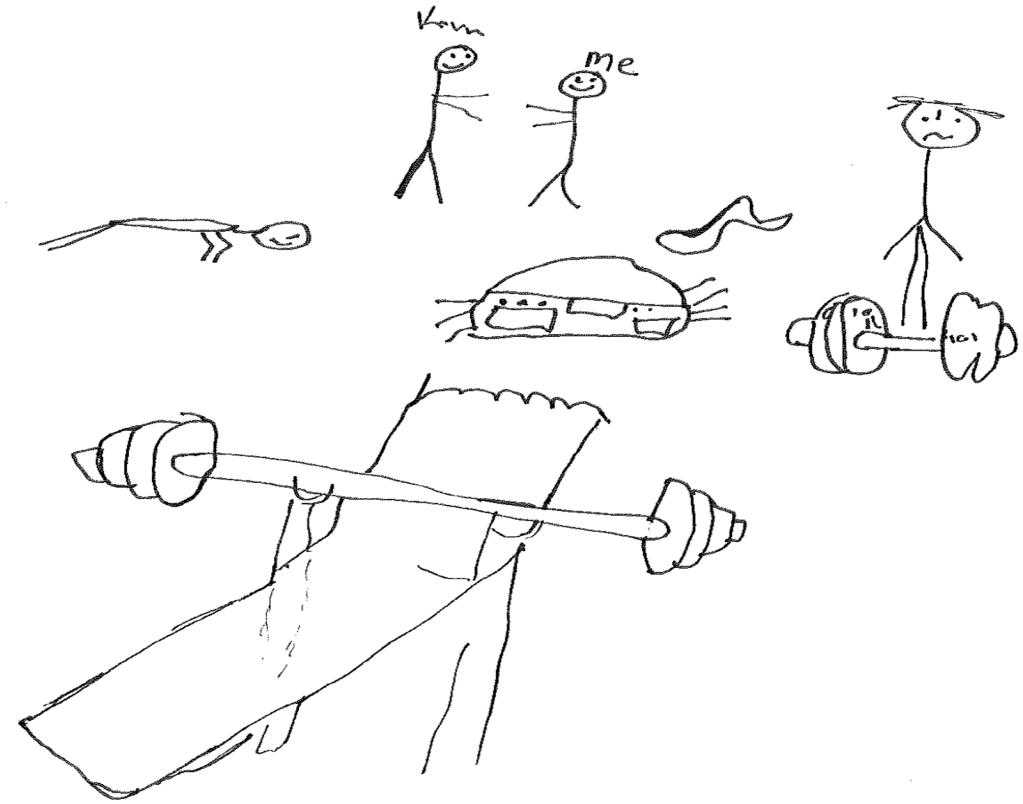

FIGURE 10
Drawing by the Rock.

FIGURE 11
Drawing by Hloni.

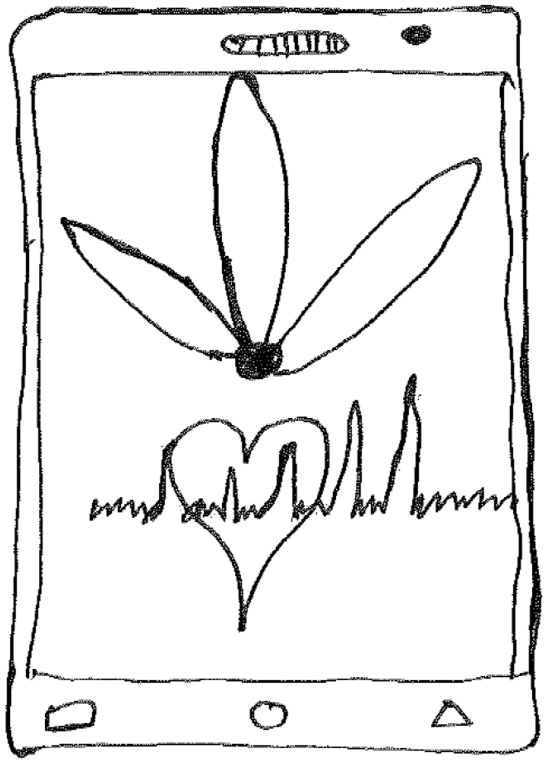

FIGURE 12
Drawing by Jagghlik.

Tony, a 17-year-old boy made drawings of a television set, three houses, clouds, the sun, human figures and a Bible (Figure 13).

Tony wrote the following paragraph:

> *Deur TV te kyk, deur my familie by my te hê, die Bybel help my* [By watching tv (television), having my family with me, the Bible helps

> me]. *Want ek het die Here se ondersteuning* [Because the Lord supports me], *ek wens altyd om in 'n nuwe huis te bly en om saammet die kinders, en my vriende in diselfde huis te bly* [I wish to live in a big house and together with other children, and friends in the same house].

On a personal level, Tony coped by *watching television* and *reading the Bible*. He believed the Lord supported him. It does seem as if he wished to live in a big house with other children and friends. Sigre-Leirós et al. (2022, p. 10) noted that during the COVID-19 pandemic watching television served to mitigate the impact of the pandemic-induced isolation however, binge-television watching was less effective in enhancing adaptive coping.

Pottas, 17-year-old boy made a drawing involving a human head, headphones, gym equipment and a human figure lying on a bed (Figure 14).

Pottas said the following:

> *When I gym it helps me to get rid of all my anger, listening to music helps me to keep my focus, a friend of mine is always listening when I need it the most and sleeping also helps me to not put my aggression onto other people if I cannot do any of the above-mentioned activities.*

It is evident that Pottas coped with anger through *working out in the gym* and *listening to music* to help him focus. He dealt with aggression by *sleeping*.

Zwile, a 14-year-old girl in grade 8, made a drawing of three human figures. The human figures are labeled "*Mom*," "*brother*," and "*dad*" (Figure 15).

Zwile wrote the following words on her drawing:

> *What makes me feel better are my mom, brother and dad. It makes me feel better by giving me a hug, and wish me good night, prays for me at night, feeds me and take care of my body.*

On a socioecological level, Zwile coped through *social support from her brother and parents*. The parents gave her a hug and prayed for her whenever they were around. They tried their best to care for the participant.

Discussion of findings

The purpose of our exploratory study was to document anchors of resilience in children residing in an out-of-home care institution. We were interested in determining factors and processes that enabled them to develop resilience and remain resilient seeing that they had been affected by the COVID-19 pandemic that disrupted development in young people worldwide. The main finding is that the participants resiliently coped with their lives due to complex combinations of personal strengths and socioecological resilience resources or anchors.

Table 1 summarizes the personal and socioecological resources or anchors that enabled the resilience of the participants.

From Table 1 a number of themes or resilience anchors can be inferred. For instance, in terms of personal anchors, it is evident that religion—as part of culture—played a prominent role in enabling resilience in the participants. Four participants mentioned prayer, worshipping, reading the bible and listening to gospel music as

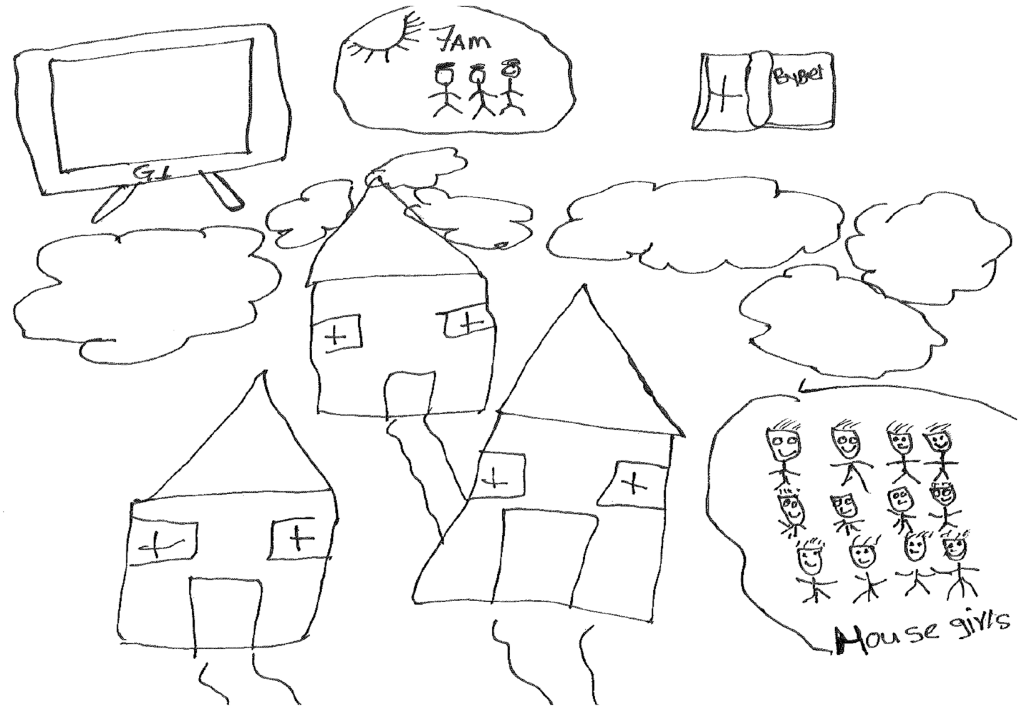

FIGURE 13
Drawing by Tony.

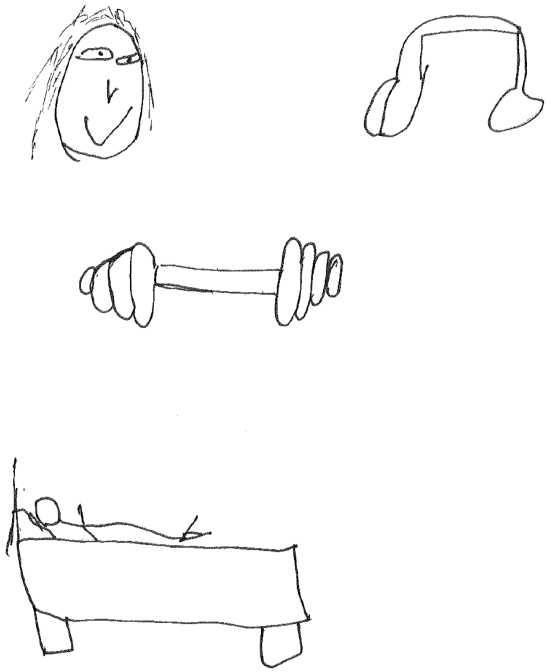

FIGURE 14
Drawing by Pottas.

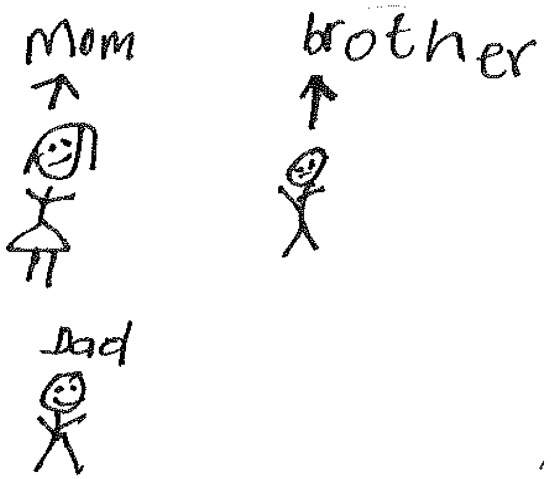

FIGURE 15
Drawing by Zwile.

anchors for their resilience. Having faith has been linked to resilience in other South African studies involving children in care institutions (Malindi and Theron, 2010, p. 323). Other studies that documented religious faith include the study by Gunnestad and Thwala (2011, p. 169) involving young people in Zambia and Eswatini. It is important to note that these studies occurred prior to the COVID-19 pandemic, except one by Ilashenko et al. (2021, p. 5). The study by Ilashenko et al. (2021, p. 5) made a similar finding in a study that occurred during the COVID-19 pandemic and added that religious practices enabled participants to calm down, and thus cope resiliently amidst the fear and uncertainty that the pandemic produced.

TABLE 1 Personal and socioecological resilience resources.

Personal resilience resources/anchors	Socioecological resilience resources/anchors
An attitude of gratefulness	Having positive relationships
Comfort eating of sweets	Loving hugs from parents
Concentrating on studies	Parents praying for them
Desire to succeed	Perceived connectedness to parents
Face mask	Seeing pets as friends
Future focus	Support from peers
Having a safe place	Support from sister
Having religious faith	Support from uncle
Hope for a better life	Support from caretakers
Lessons from stories read	Having bonds with pets
Listening to music	
Love for animal or pets	
Love for people	
Making a plan	
Not focusing on negatives	
Optimism	
Perceived care	
Prayerfulness	
Reading motivational quotations	
Reading stories	
Reading the Bible	
Seeing every day as a new day	
Singing	
Sleeping	
Social media	
Watching television	
Working out in the gym	
Writing songs	

A second strong personal anchor nurtured by a number of participants was to cope via music—either listening to music, singing or writing songs. In this regard, a participant specifically mentioned that listening to gospel songs brought back her joy. It was not clear how music was listened to—but some participants mentioned using their cellphones for this. Headphones were sometimes used too. This anchor enabled a number of participants to cope and develop their capacities to resile—albeit through escaping reality for periods of time. Music has been reported in other studies (Kegelaers et al., 2021, p. 1,279; Rosenberg et al., 2021, p. 6) that did not necessarily sample youth in care institutions. Of these two studies, it is the study by Rosenberg et al. (2021, p. 6) that reports that music enabled resilience and this shows that music is an accessible anchor of resilience.

A third common personal (and perhaps socioecological) anchor was to spend time on one's cellphone and engage in relationships via social media. Various social media platforms were utilized with Facebook being the most popularly used to connect with family

members. Previous studies have shown how people can resile in the context of disaster through virtual networks (Dufty, 2012, p. 40; Jurgens and Helsloot, 2017, p. 79; Mano, 2020, p. 460; Senekal et al., 2022, p. 10–11). It can be argued that through virtual networks people can maintain meaningful connections that enable adaptive coping.

Some participants related that they tried to focus on certain activities to cope. For instance, a workout in the gymnasium was mentioned by two participants. In our study, working out was used to relieve anger, in like manner, Lancaster and Callaghan (2022, p. 1) note that physical exercise enabled resilience in the context of the COVID-19 pandemic. It does seem as if working out can be protective in different contexts.

Sleeping was mentioned by more than one participant as a way to cope adaptively. While other studies show that sleeping enables adaptive coping (Guida et al., 2023, p. 3), sleeping in our study was used as an escape mechanism. Another escape mechanism that our participants used to cope resiliently was comfort eating. It appears as if comfort eating is a response to stress. For example, there is a previous study that notes the protective function of comfort eating in the context of the COVID-19 pandemic (Salazar-Fernández et al., 2021, p. 1).

A few participants mentioned that watching television enabled them to remain resilient. In a preceding study by Sigre-Leirós et al. (2022, p. 10) the findings show that watching television had two sides to it. On the one hand it enabled coping but on the other it rendered at risk people more vulnerable especially if it is overdone.

Reading of especially stories, and motivational quotations was mentioned as a way in which other participants coped resiliently. Reading can inspire one who is at risk and provide useful information on adaptive coping resources (Tovey, 2021, p. 8).

The strongest and most common socioecological anchor expressed by most participants was to connect with their caregivers, family and friends in one way or the other—despite having minimal time in their physical presence. This happened mostly via cellphone communication, but personal touch and hugs were also mentioned when family members were able to meet in person. Interestingly it was not always direct family that was mentioned, but a significant extended family member such as an uncle with whom a very strong bond existed.

A number of participants consciously focused on constructive intrapersonal attitudes, such as gratefulness, a desire to succeed, focusing on the future, clinging to hope for a better life in future, not focusing on negatives, making a plan and choosing to be optimistic. Kumar et al. (2022) found that gratefulness served as a resilience anchor during COVID-19. Our findings therefore corroborate this finding although our study involved youth in care.

Historically, the main aim of a child welfare system has been to enhance the wellbeing and safety of children and youth at risk (Leve et al., 2012, p. 1,208). In some instances, however, there have been reports of young people being maltreated in these institutions (Gusler et al., 2020, p. 455). In contrast to the latter, the out-of-home group home care institution where the participants resided seemingly served as a microsystemic stronghold (Theron and Engelbrecht, 2012, p. 265) that provided opportunities for social support. In our study, social capital was sourced from a boyfriend, girlfriend, sister, brother, an uncle, friends, mothers, fathers, grandmother, and caregivers. A similar finding was made in South African studies by Moodley et al. (2020, p. 47) and van Breda and Theron (2018, p. 1).

Following an extensive review of South African studies, van Breda and Theron (2018, p. 1), demonstrated the intersectionality of personal, relational, structural, and spiritual or cultural enablers of resilience in young people, although the studies reviewed preceded the COVID-19 pandemic. This is further evidence that, in line with the SERT's principle of decentrality (Ungar, 2011, p. 4), the capacity to cope resiliently depends not only in what is built inside children but also in what is built around them. Therefore, it should be accepted that children tend to flourish in the context of risk when they have strong social support systems and access to multiple services in their localities (Theron et al., 2022, p. 7).

Having strong relationships with animals was also mentioned as a socioecological (and perhaps personal) resilience anchor. It is interesting to note that our finding was made in earlier studies (Thompson et al., 2014, p. 215; Applebaum et al., 2021, p. 2) involving participants in their original homes.

Typically, care institutions do not have enough resources; and the fact that the care institution where the participants resided enabled the participants to develop resilience is evidence of the complexity of the resilience phenomenon and the processes (i.e., risks and promotive/protective factors) linked to it according to the SERT (Ungar, 2011, p. 1). Little was made by participants of the risks they faced, however, they referred to choosing loneliness, sadness, anger and aggression and ways in which they coped with these risks.

In contexts where options are minimal, some young people resort to coping with risk in ways that could be seen as atypical (Malindi and Theron, 2010, p. 324; Ungar, 2011, p. 7–8). In this study, the young people did not report many mechanisms that could be seen as atypical according to the SERT (Ungar, 2011, p. 7–8), however, they mentioned escaping reality, comfort eating and choosing loneliness, that in this context, could be seen to be atypical.

It is important to note that the participants in our study were all still minors, and that the care institution provided them with the protection and care they needed to resile in the context of risk. However, it was not clear whether they were exposed to managed opportunities for independent living beyond care (Hlungwani and van Breda 2022, p. 137). A South African study by Hlungwani and van Breda (2022, p. 137) found that involving youth in care in programs that prepare them life beyond care enabled resilience. It prepares them to be productive in the open society with all the changes in it.

Finally, while our study reports promotive factors that are well-known and universal in some instances, it should be noted that these factors were based on studies involving young people who were either not affected by the COVID-19 pandemic or not in care institutions. Furthermore, the findings wise us that the resilience of young people can be meaningfully sustained in future disasters if access to combinations of personal and socioecological is enabled.

Limitations

Although this study makes interesting findings, it was not without limitations. The study was conducted in a group home care institution that is well resourced in terms of professionals and finances. The findings should therefore be seen within this context. The findings

may be transferable to similar institutions, but care should be taken when trying to transfer them to care institutions that have less access to resources and thus fall short of their mandate. The method used to co-generate data was least intrusive and child-friendly, however, findings from studies that use a single method to generate data ask for replication and the use of multiple methods to generate data.

Conclusion

The findings of this study suggest that youth in an out-of-home care group home setting developed and remained resilient in the context of risk due to certain personal and socioecological resources/anchors. The findings do not point to evidence that they maintained resilience via other role players outside of the care institution. For example, they did not mention how their schools enabled them to cope and how the care institution connected them to community services and resources except the school. It is not clear from these research findings whether these role players and services were obvious to them—or whether their personal and care setting-related anchors were viewed as adequate.

The findings suggest that the participants' coping strategies were often gender specific. Boys listened to music and went to the gym more than girls. Girls listened to music too, but they chose to focus strongly on their mobile phones. It was interesting to note that some participants coped through strong focuses on a grateful attitude and having bonds with animals.

Of particular interest was the fact that one participant thanked the primary researcher for the privilege to take part in the research. This may suggest that the draw-and-write technique enabled the participants to perform a cognitive appraisal of their situations, voice their opinions and achieved a measure of catharsis.

Finally, we recognize the need for the study to be replicated with more varied child-friendly methods, in more diverse care settings and with a focus on the role of multisystemic interventions and services.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by Community-based Educational Research at North-West University. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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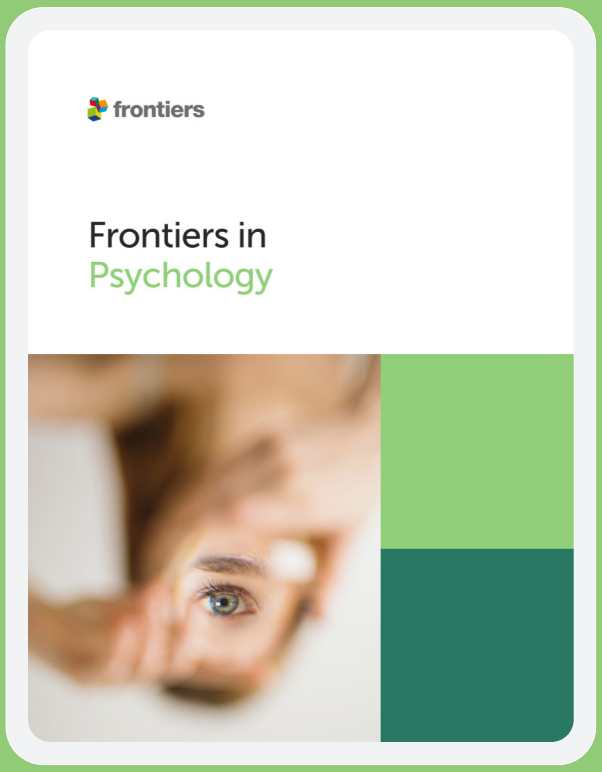

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