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Language skills and well-being in early childhood education and care: a cross-sectional exploration in a Swedish context

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Language skills play a vital role in academic achievement and support reading and writing acquisition. Language skills also enable children to interact with others and develop social abilities. Given the predictive value of early language skills for academic attainment and their connection to social interaction, they have been suggested to be an indicator of well-being as well. However, children from culturally and linguistically diverse backgrounds present lower scores than their peers with a majority language background on standardized language tests, such as vocabulary assessment. In the current study, we examined the relationship between language and self-reported well-being in the school context, based on data from a community sample of 85 five-year-old children attending eight preschools in three Swedish municipalities. Language skills were assessed through measures of vocabulary (receptive and expressive) and narrative skills (MAIN) and were analyzed using structural equation modeling. Narrative ability and vocabulary skills were correlated, but they appear to be distinct constructs. Exposure at home to the majority language was positively associated with vocabulary skills, while narrative ability was not strongly associated with language background. Language skills and well-being were not significantly correlated in the total sample, but post hoc analysis revealed that language background may affect the association. A novel contribution of this study is empirical data on language performance from a community sample with a large proportion of children with diverse language backgrounds. The relationship between subjective well-being and language skills warrants further investigation.

KEYWORDS

additional language learning, narrative skills, vocabulary, well-being, early childhood education

1. Introduction

Increasing evidence suggests that limited language skills during childhood can have lifelong consequences in a range of areas including behavior, learning, well-being, and future employment (Beitchman et al., 2008; Schoon et al., 2010; Chetty et al., 2011). Communication with peers and adults provides the child with crucial exposure to language, which, according to

usage-based theory, fosters language development (Dickinson and Tabors, 1991; Huttenlocher et al., 1991; Hoff, 2006; Hurtado et al., 2008; Cattani et al., 2014). Consequently, communication during early childhood (from birth to age 5, Organization for Economic Co-operation and Development OECD, 2009) supports further language development (Dickinson and Porche, 2011; Golinkoff et al., 2019) and contributes to establishing relationships with peers (Forrest et al., 2018; Doove et al., 2021). However, language skills during early childhood differ at the group level. For instance, children from disadvantaged backgrounds (Huttenlocher et al., 2010; Fernald et al., 2013; Gilkerson et al., 2017) present lower language skills than their peers from privileged backgrounds before formal education commences. Similarly, during early childhood, children who are additional language learners (i.e., who are from an immigrant background or speak other languages in the home setting) present lower language skills than children from a majority language background (Bialystok et al., 2010; Lonigan et al., 2013; Strand et al., 2015). Limited language skills are linked to low well-being (Law et al., 2017), and, during early childhood, limited language skills increase the risk of victimization among peers, particularly for children from immigrant backgrounds (Von Grünigen et al., 2012; Pistella et al., 2020).

However, few studies have examined the well-being that is reported by children themselves, during the period of early childhood. In this cross-sectional study, we examine a community sample with a large proportion of additional language learners and explore the relationship between language skills and self-reported well-being. We have conducted this study because subjective well-being in preschool can serve as a quality measure of the educational setting, and combined with measures of language skills, may provide a basis for early intervention. Although this study has a primary interest in the population of additional language learners, language and well-being data from preschool-aged children is limited for Swedish preschool children and serves as an important point of reference.

1.1. Well-being and language

Over the last decades, public focus on the well-being of children has been increasing (Ben-Arieh, 2008), and at the policy level, the United Nations Convention on the Rights of the Child (United Nations, 1989) has been ratified in several countries and adopted to national legislation (Lundy et al., 2012). Moreover, this intensified emphasis on the well-being of children has also been displayed by the OECD in aiming to improve the quality of early childhood education (OECD, 2017a, 2020). The term "well-being" embodies a multitude of concepts and is defined here as the existence of positive emotions, and the absence of negative feelings, while also being satisfied with one's life. Given its multifaceted nature, well-being can be explained through a range of measures, including both subjective (self-reported) and objective (contextual) ones (Diener, 1984). However, adults are still commonly used as informants to assess subjective well-being in children (Pollard and Lee, 2003; Cho and Yu, 2020). A few incentives for relying on proxy reports have been proposed, such as the language or cognitive skills of young children being too limited to report well-being (Ben-Arieh et al., 2014; Fane et al., 2020). Moreover, there are concerns regarding the validity of the responses that young children provide. For instance, children may provide socially desirable answers or apply a strategy by consistently providing the same response (Krosnick, 1991; Chambers and Johnston, 2002). On one hand, the motive for relying on adults' reports stems from the view that children are incapable and do not know what is best for them. On the other hand, the Convention on the Rights of the Child stresses that children should have a say in matters that concern them, while subjective measures can be adjusted as well to better suit young children. Moreover, using proxy reports is challenging, as self-reported accounts of well-being diverge from adult proxy reports, resulting in limited agreement and questionable validity (Casas et al., 2012; Allen et al., 2018). The proxy reports of child well-being tend to over-identify children with externalizing behavior and more often recognize boys as being at risk of reduced well-being (Loades and Mastroyannopoulou, 2010; Stensen et al., 2022). Some instruments aim to overcome the linguistic and cognitive barriers of young children by using emoticons (Fane et al., 2018; Stange et al., 2018) and fewer response options in questionnaires (Borgers et al., 2004; Alan and Kabasakal, 2020).

As language is central to interpersonal communication, limited language skills affect social aspects of life, including friendship and well-being. For instance, children with less developed language skills at preschool age are more likely to display difficulties concerning behavioral and socioemotional aspects than their peers (Roben et al., 2013; Levickis et al., 2018; Doove et al., 2021). Language is also fundamental for establishing friendships and developing social skills such as negotiating with peers and expressing one's wishes (Brinton et al., 2004; Conti-Ramsden et al., 2013). Well-developed oral language skills may also increase resilience toward socioemotional difficulties (Haft et al., 2016). The developmental aspects of early language skills can also be viewed from a broader perspective, where language competency contributes to more comprehensive models of positive development (Lerner, 2009). Indeed, as early language skills affect the ability to interact with others and also influence further development, it is an important component for both present and future well-becoming (Ben-Arieh, 2008). Within the education setting of early childhood, a positive social climate and peer relationships influence later academic outcomes (Morris et al., 2013; Kiuru et al., 2015; Haft et al., 2016). Furthermore, happiness in the education setting has been suggested as a positive bias for learning (Hascher, 2008).

In terms of language exposure, children from a minority language background use another language in the home setting, not the majority language used in school and public life (De Houwer, 2017). De Houwer (2015) has conceptualized minority language use as 'harmonious' when the individual and their family experience a positive notion of their bilingualism concerning the surrounding society. In other words, harmonious bilingual development is the result of frictionless communication, where language use and competencies become an asset (De Houwer, 2015). The harmonious bilingual development has similarities with the well-being concept in terms of the existence of positive emotions as well as the absence of negative feelings. A few studies have explored the well-being of children with minority language backgrounds, pointing to the importance of rich exposure, i.e., multiple ways to use and encounter the minority language (Sun, 2019). Furthermore, greater proficiency in both majority and minority languages has been associated with higher levels of well-being for minority language speakers (Müller et al., 2020). Conversely, a minority language speaker with low levels of language skills in preschool can face an increased risk of being bullied by majority-speaking peers (Von Grünigen et al., 2012; Pistella

et al., 2020). The Swedish National Education Agency (SNAE, 2009) has also reported that both immigrant background and limited language skills increase the risk of being bullied in the school setting. It appears that limited communicative competence increases the risk of victimization, while also influencing social acceptance among peers (Gertner et al., 1994).

The knowledge about self-reported accounts of well-being at the preschool age is scarce (Pollard and Lee, 2003; Cho and Yu, 2020). First-hand knowledge would enable new ways of addressing and understanding child well-being, which could consequently provide insight into potential targets of support (Mashford-Scott et al., 2012). More recently, research on subjective reports of child well-being in early childhood education indicates that a majority of children at least consider themselves as "OK" or "just OK" and approximately one out of 10 experience a low degree of well-being (Sandseter and Seland, 2016; Allen et al., 2018; Riad et al., 2021). Overall, the ability to communicate affects the social and emotional aspects of life from the early years and links together language skills and perceived well-being.

1.2. Vocabulary skills

Vocabulary skills have been recognized as an important factor for reading acquisition (Roth et al., 2002; Lervåg and Aukrust, 2010; Duff et al., 2015; Lervåg et al., 2018) and have been associated with later reading abilities of both decoding and text comprehension (Ouellette, 2006; Quinn et al., 2015). Vocabulary skills can be further described by concepts of breadth and depth, where breadth corresponds to the total number of words in one's lexicon, and depth relates to how comprehensively these words are understood (Hadley and Dickinson, 2020). The use of both depth and breadth when assessing vocabulary can reveal somewhat distinct aspects of the lexicon, but they seem to be part of the same construct (Tannenbaum et al., 2006; Hadley et al., 2019). It has been suggested that robust and rich representation in word knowledge enhances language processing and thereby affects reading comprehension (Perfetti, 2007; Hadley and Dickinson, 2020). Rich vocabulary can also represent more general world knowledge (Snow, 2017), which in turn supports the ability to make inferences about linguistic content (Ackerman et al., 1990; Calvo, 2005). Nevertheless, data from several studies on vocabulary have documented early differences in vocabulary development, and bilingual children seem to have a less developed vocabulary in the majority language in terms of both breadth (Bialystok et al., 2010; Farnia and Geva, 2011) and depth (Jean and Geva, 2009; Karlsen et al., 2017). Some studies have also reported gender influence on early vocabulary skills, and girls, on average, tend to outperform boys (Huttenlocher et al., 1991; Eriksson et al., 2012; Place and Hoff, 2016; Rydland and Grøver, 2020). This gap in early vocabulary can have long-term negative consequences for both reading comprehension (Lervåg and Aukrust, 2010; Lee, 2011; Quinn et al., 2015) and academic achievement (Bleses et al., 2016).

1.3. Narrative skills

Another way to assess early language skills is through storytelling, also referred to as narratives (Reese et al., 2012). As narratives occur in various cultures and assimilate daily language interaction, they have been described as a naturalistic form of language assessment (Botting, 2002; Heilmann et al., 2010). It has been suggested that apart from possessing ecological validity, language assessment through narratives imposes less bias for culturally and linguistically diverse samples (Curenton and Justice, 2004; Fiestas and Peña, 2004; Cleave et al., 2010; Heilmann et al., 2010; Bohnacker, 2016). Narratives provide rich linguistic data, as the teller needs to build upon several linguistic domains, such as semantics, morphology, syntactics, and pragmatics (Vandewalle et al., 2012). In other words, storytelling requires the child to not only express words and content but also organize the information into a meaningful format for the listener. Thus, the production of narratives involves both cognitive and linguistic factors when both world knowledge and pragmatic conventions are used (Berman and Slobin, 1994; Boudreau, 2008; Bohnacker, 2016). Narrative ability develops from the age of 2 to 3 years, and as this ability develops, more complex information and elaborate descriptions are provided (Reese et al., 2012; Bitetti and Hammer, 2021). Before the age of 4, the narratives often comprise unconnected parts of objects, actions, or characters. At the age of 4 to 5 years, causality markers typically appear. The next development in narrative ability concerns the description of the goals of the main character, which emerges at about 6 to 7 years of age. A complete narrative sequence, known as an episode, occurs at approximately 8 to 9 years of age (Reese et al., 2012).

Several measures of narrative ability exist; among these, the Renfrew Bus Story (Renfrew, 1997) and the Frog Story (Mayer, 1969) are commonly used (Berman and Slobin, 1994; Reese et al., 2012). However, the Bus Story builds on retelling instead of generating a story, and it tends to over-identify preschool children as having language difficulties, such as with children from a minority language background (Pankratz et al., 2007). The Frog story, on the other hand, has a limited scoring system, making it prone to ceiling effects (Fiestas and Peña, 2004; Klop, 2011). To overcome these limitations, the Multilingual Assessment Instrument for Narratives (MAIN) was developed. The instrument originates from European Collaboration in Science and Technology Action IS0804 and measures aspects of macrostructure, which corresponds to the overall organization of the narrative and how the different parts are connected (Gagarina et al., 2012). Consequently, the macrostructure highlights a general aspect of the organization of a narrative (Bohnacker, 2016).

Some studies have investigated the relationship between narrative ability and vocabulary knowledge for additional language learners of preschool age (Uccelli and Páez, 2007; Paradis et al., 2013; Strasser and Del Río, 2014; Blom and Boerma, 2020; Shiro and Hoff, 2021). For instance, Uccelli and Páez (2007) analyzed a subsample of additional language learners with a mean age of 5.58 and of low socioeconomic status. They reported a moderately positive relationship ($r = 0.55$, $p < 0.01$) between vocabulary and narrative telling quality when the learners were tested in the majority language. It should be noted that their sample exhibited a large variation in vocabulary performance, as 1/3 of the participants scored two standard deviations or more below the mean score. However, the vocabulary scores tended to remain low 1 year later, i.e., in the first year of reading instruction (Uccelli and Páez, 2007). Blom and Boerma (2020) described that two bilingual samples (Tarifit-Dutch and Turkish-Dutch), aged 5.8 years old, performed on par with monolingual peers in macrostructural narrative comprehension and telling, but displayed significant differences on a standardized vocabulary measure. Owing to their longitudinal design, they also

found an initial relationship between language richness at home (language activities and exposure) and narrative comprehension in the Tarifit-Dutch sample. In the Turkish-Dutch sample, they found a relationship between vocabulary development and socioeconomic status (parental education level) at the two annual follow-ups. The authors concluded that narrative assessment of telling and comprehension might distinguish children with language difficulties, regardless of language background (Blom and Boerma, 2020). In contrast, vocabulary measures in the majority language for additional language learners may be unsuitable as a measure to identify children in need of support, when compared to monolingual norms (Boerma et al., 2016; Blom and Boerma, 2020; Shiro and Hoff, 2021). The identification of children in need of support is particularly complicated among additional language learners, and this has been acknowledged in both Europe (Bloder et al., 2021) and the United States (Roseberry-McKibbin, 2021)., where both over- and under-identification may have negative consequences for the individual and for an equitable allocation of resources (Tomblin et al., 1997). To conclude, vocabulary competence may influence narrative skills (Uccelli and Páez, 2007), but narrative assessment seems to exert less bias for bilinguals than vocabulary measures do, when aiming to identify children in need of support (Paradis et al., 2013; Boerma et al., 2016; Blom and Boerma, 2020).

1.4. Our context

Among all the OECD countries, Sweden has had the steepest decline in school performance and equity during the period 2000–2015 (OECD, 2015). In addition, the influence of student background has increased, along with decreasing performance among children with an immigrant background (Taguma et al., 2010). These results have consequently led to several studies aiming to investigate education quality, including during the early years. A three-year audit by the Swedish School Inspectorate (SSI) concluded that a quarter of the 455 inspected preschools required major quality improvement in internal organization, as well as higher teacher competencies (SSI, 2018). In particular, the teachers expressed that their knowledge about how to support children in their additional language was limited, and the structure of support was lacking in terms of organization (SSI, 2018). In Sweden, approximately 20% of the children attending preschool have a minority language background[1] and are subject to the mother tongue language policy (Garvis and Lunneblad, 2018) stating that children from language backgrounds other than Swedish should be offered opportunities to communicate and develop skills in both their mother tongue and Swedish (SNAE, 2019a).

Apart from the OECD, national reports have also stated that equality in terms of access to early childhood education is lacking, as children from disadvantaged backgrounds (based on parental education and income), which includes a large proportion of additional language learners, tend to begin preschool later than their peers (Garvis and Lunneblad, 2018; SOU, 2020). Moreover, preschools within areas of disparity have been reported to have the smallest proportion of educated staff, and the Swedish language skills of the staff are considered inadequate (SOU, 2020). These descriptions of the current situation in Swedish preschools indicate inconsistencies in terms of both access and quality for children living in areas of disadvantage. Although the national reports aim to describe the quality of preschool and aspects to improve it, knowledge is limited concerning the actual performance of the children attending preschool in general, particularly those within the areas of disadvantage. Although the most recent years have provided new insights about literacy development in community samples (e.g., Herkner et al., 2021), there is a dearth of studies focusing on the early language skills of additional language learners in the early childhood setting in Sweden.

Taken together, early childhood language abilities may affect long-term development, academic achievement, and social aspects of life, with structural differences having previously been reported for children coming from an additional language learner background. Assessment of narrative ability may offer a less biased measure of language ability than standardized tests do, but less is known about whether this finding holds for samples with diverse language backgrounds. As linguistic competency affects the ability to interact with others and poor language skills can increase the risk of victimization, we are interested in the association between early language skills and well-being for additional language learners. The current study aimed to improve the understanding of the relationship between language skills and well-being, in early childhood education.

1.5. The current study

This cross-sectional study examined the relationship between language skills and self-reported well-being, with background factors such as being an additional language learner and gender, through a structural equation modeling. Gender is relevant in this context as disaggregated data for girls and boys are part of the equality targets (OECD, 2017b; UNICEF, 2021). We expected that narrative ability and vocabulary would be associated but would represent different facets of language skills (Uccelli and Páez, 2007). Concerning narrative skills and gender, three previous studies have examined gender effects, but found no difference between boys and girls (Maviş et al., 2016; Wehmeier, 2020; Tonér and Gerholm, 2021). Furthermore, we expected that vocabulary skills would be influenced by language background, where native language speakers tend to produce higher scores than their peers with bilingual background (Blom and Boerma, 2020). Given the limited data from community samples concerning language skills and concurrent self-reported well-being, this study aimed to provide further insight into how these concepts are related during early childhood. Based on previous research, our first research question (RQ) focused on the relationship between oral language skills and well-being, and the second focused on potential influence of language background and gender.

1 In addition, Sweden has recognized five official national minorities (Sámi, Swedish Finns, Tornedalers, Roma, and Jews) in line with the ratification of the European Framework Convention for the Protection of National Minorities. The legislation (National Minorities Act) aims to protect and promote cultural history, including language. According to this act, persons from any of the national minorities are eligible to receive education in their mother tongue to some extent, depending on local circumstances. The national minorities have an extended right to receive mother tongue education, regardless of previous exposure to the specific language.

RQ1: Are the language skills of narrative ability and vocabulary associated with self-reported well-being for 5-year-old preschool children?

RQ2: Do the language skills of narrative ability and vocabulary and self-reported well-being differ concerning individual factors: (a) additional language learner status and (b) gender?

Previous research suggest that native speakers present higher scores than additional language learners on the vocabulary tests (Jean and Geva, 2009; Bialystok et al., 2010). Hence we expect the same tendency in this study. Concerning the relationship with language skills and well-being in preschool, some data have indicated that lower language skills can negatively affect both social status among peers (Gertner et al., 1994) as well as increase the risk for victimization (Von Grünigen et al., 2012; Pistella et al., 2020). Therefore we hypothesized that lower language skills would also reflect lower reports of well-being. Finally, we hypothesized that girls would present higher scores than boys in vocabulary measures (Lange et al., 2016; Place and Hoff, 2016; Rydland and Grøver, 2020).

2. Method

2.1. Participants

The sample included 85 preschool children with a mean age of 5.47 years ($SD = 0.25$), and 57.6% of them ($n = 49$) were girls. The participants were recruited from 9 preschools in the eastern part of Sweden. The preschool staff were invited to participate in a literacy intervention consisting of professional development and dialogic book reading in small groups (Whitehurst et al., 1988). The data were collected before the intervention started. All caregivers and children in the involved classrooms were invited to participate in the study. The locations of the preschools are categorized as a large city ($n = 2$), medium-sized city ($n = 3$), and commuting municipality ($n = 4$) according to the official classification of municipalities (Swedish Association of Local Authorities and Regions, 2016). The background characteristics of the children, including language environment at home and language exposure, were collected through a caregiver questionnaire. The questionnaire was available in both Swedish and English and distributed through paper or as a digital version through the respective preschools to all caregivers. The response rate was 61% ($n = 52$). In the caregiver questionnaire, 9 reported that they had been worried about the language development of their child. A minority ($n = 2$) of the caregivers reported that their child had a history of hearing difficulties. The level of caregiver education was reported according to the classification of Statistics Sweden (SCB, 2022). The scale ranges from 1 to 3, where level 1 corresponds to lower secondary education, level 2 equals upper secondary education, and level 3, to university studies. Seventeen females and 19 males reported level 2, whereas 29 female and 18 male caregivers reported level 3. Additionally, 4 females and 8 males reported education level 1 (lower secondary), and 3 male caregivers reported no formal education. Regarding language use, 21 different languages, apart from Swedish, were reported, and Arabic was the most common ($n = 9$), followed by English ($n = 8$). Fourteen reported that they did not speak Swedish in their homes. In terms of language proficiency, Swedish was reported to be the strongest language for 36 of the children, while 10 were equally proficient between languages, and 5 were stronger in languages other than Swedish. Additional aspects from the caregiver questionnaire, including child age at assessment, time since the commencement of preschool, and the average age when the child expressed his or her first word are provided in Table 1. The caregiver questionnaire was supplemented by additional questions regarding whether any caregiver was a native speaker of Swedish, which was provided by the preschool teachers. According to the preschool teacher report, 31.1% ($n = 27$) of the participants had at least one caregiver whose native language was Swedish (CGNS); therefore, the caregivers of 68.9% ($n = 58$) of the participants were not native speakers of Swedish. Children whose caregivers were not native speakers of Swedish (CLOTS) were considered additional language learners. The composition of home language background at each preschool site varied; 25 to 100% of the participants were CLOTS. A Socioeconomic (SES) index in which a higher score indicates a greater need for support was also retrieved from the Swedish National Agency of Education (SNAE, 2019b). The index has a range of 20 to 596, with a mean of 106. The SES index is created by Statistics Sweden on behalf of the Swedish National Agency of Education as a measure to allocate resources, according to objective factors in the vicinity of each school. The index comprises measures of averaged caregiver education and income as well as social security compensation, and adolescent acceptance rate to secondary education, based on the nearest school. A higher index score indicates higher poverty within the school district.

2.2. Data collection and measures

Trained research assistants and the first author assessed all the children individually, following a standardized procedure with manualized instructions and a fixed test order. Children were tested individually, in Swedish at each preschool site in a separate room. The assessment was audio-recorded during the Vocabulary Depth and Multilingual Assessment Instrument for Narratives (MAIN) rounds. Research assistants informed the children about the testing procedure, e.g., that they could quit the test at any time. Data collection occurred in November–December 2019, and each

TABLE 1 Sample characteristics with split on language background.

	CGNS-n	*M* (*SD*)	CLOTS-n	*M* (*SD*)
Age at assessment (months)	22	63.04 (3.76)	39	63.38 (2.89)
Months since commencement of preschool	16	43.44 (13.5)	30	43 (14)
Age of first word (months)	14	9.86 (4.8)	24	9.54 (4.14)

CGNS, At least one caregiver is a native speaker of Swedish; CLOTS, No caregiver is a native speaker of Swedish.

assessment lasted about 20–35 min. The first author had 7 years of clinical experience as a speech-language pathologist and handled all scoring for the language measures and administration of data. Interrater reliability was assessed for the narrative measure and one of the vocabulary measures (Vocabulary Depth), by two external raters for each respective measure. The external raters assessed a randomized sample of 20% of the total, based on the audio recordings from the assessment. Both external raters were knowledgeable in child language assessment, with seven and 8 years of clinical experience as speech-language pathologists.

2.2.1. How I feel about my school

In order to assess self-reported well-being, we used the How I Feel About My School (HIFAMS) questionnaire, wherein children evaluate their well-being in the school context (Ford, 2013). HIFAMS contains seven items scored on a 3-point Likert-scale with emoticon-supported response options of *Happy*, *Ok*, and *Sad*, which correspond to 2, 1, and 0 points, respectively, where a higher score indicates a higher degree of perceived well-being. All items have the same structure (When I think about X, I feel…), and they address teachers, peers, the classroom, schoolwork, the playground, the transition to school, and school in general. Previous studies of HIFAMS indicate that children with expected lower well-being, such as children with ADHD symptoms (May et al., 2020) and children at risk of exclusion from school (Allen et al., 2018), also rate themselves as less happy compared to peers. HIFAMS has been adapted and validated in Swedish, with a combined sample from this study and another sample (Riad et al., 2021).

2.2.2. British picture vocabulary scale II

The British Picture Vocabulary Scale II (Dunn et al., 1997) is a multiple-choice test in which the test leader asks the child to match oral stimuli provided by the test leader with one out of four pictures. The test is structured such that it has 12 items per set and 144 items in total. The assessment starts with the age-matched set and stops when the child provides less than five correct answers within a single set. The total numbers of both correct answers and errors are important, as these comprise the raw score. A Norwegian standardization implemented by Lyster et al. (2010) has reported data for 5;0 to 5;5-year-olds ($n = 68$; $M = 60.91$; $SD = 11.99$; range 34–87; $\alpha = 0.92$) and 5;6 to 5;11-year-olds ($n = 66$; $M = 67.06$; $SD = 14.09$; range 35–98; $\alpha = 0.92$). Several Norwegian studies have used BPVS-II for five-year-olds with a mean score less than ±0.5 *SD* from standardization (Klem et al., 2016; Rogde et al., 2016; Karlsen et al., 2017). For this study, a native speaker of Norwegian translated the test into Swedish. The test was then retranslated to Norwegian and discussed with the research group to check for similarities and potential language differences between the English, Norwegian, and Swedish versions. The assessment followed the standard procedure of BPVS-II and started at the second set of items. The publisher, GL Assessment, agreed to the translation of BPVS-II and its usage within this study. Cronbach's alpha reliability for the Swedish version in this sample was 0.94.

2.2.3. Vocabulary depth

Vocabulary Depth is a study-specific test containing a definition task to assess the depth of vocabulary. The test leader randomly presents 18 out of 36 words and asks the child to define them successively. Each response from the child is coded 0–3, depending on the complexity of the answer. A simple explanation generated 1 point, a good example or antonym, 2 points, and 3 points were generated for a synonymous word or definition. We selected the included words—with a mix of nouns, verbs, and adjectives—from a sample of picture books for children. The selection of words corresponds to a tier-2 level, i.e., words that have general usability in different contexts (Beck et al., 2013). The inter-rater agreement, between the first author and the external rater, was assessed using Cohen's kappa (Cohen, 1960). The mean kappa value was 0.71, corresponding to moderate agreement (McHugh, 2012). However, four items showed lower agreement (κ <0.40). The first author examined these items and then reassessed the data for all participants on these specific items. Vocabulary Depth had a Cronbach's alpha reliability of 0.73. In order to assess the concurrent validity of the study-specific Vocabulary Depth, we compared the results with a theoretically similar but distinct construct (BPVS-II). Just as the Vocabulary Depth targets the ability to define a word (depth), BPVS-II gauges a quantitative aspect of vocabulary, i.e., the total number of words in the lexicon. Former studies have indicated that these aspects of word knowledge are related but distinct (Ouellette, 2006; Hadley and Dickinson, 2020).

2.2.4. Multilingual assessment instrument for narratives

The Multilingual Assessment Instrument for Narratives (MAIN) is a tool used to assess both the telling and comprehension of a short story (Gagarina et al., 2012). MAIN has four different stories with two pairs of parallel content and structure (Cat/Dog vs. Bird/Goat), i.e., the pairs are comparable as they share the same general storyline. All stories contain six pictures, and each dyad is referred to as an episode; thus, three episodes are contained within each story. First, the child is encouraged to narrate a story with pictorial aid, and then, comprehension questions are asked. The structure of MAIN stories is based on so-called macrostructural components, namely, Internal State Term (IST), Goal, Attempt, and Outcome (Gagarina et al., 2012). For example, the Goal component refers to the mention of an intended target of the action, such as "the cat wanted to capture/eat/kill a baby bird." The Attempt component corresponds to the action based on the Goal. The Outcome component represents the result of the Attempt and the IST, the character's emotional/cognitive reaction to the Outcome. The components are clearly linked, and a full episode contains the sequence of Goal-Attempt-Outcome. As narrative ability develops along with language skills and age, younger children often omit some components, such as the IST (Lindgren, 2018a; Öztekin, 2019). The comprehension questions within MAIN also target macrostructure components such as, "Why do you think X did that? (Goal)," which enables comparison between narrative telling and comprehension. Data from several studies on MAIN (Boerma et al., 2016; Bohnacker, 2016; Gagarina, 2016; Kunnari et al., 2016; Lindgren, 2018a, b, 2019; Öztekin, 2019; Lindgren and Bohnacker, 2020) indicate incremental development in both telling and comprehension scores over the early years, with higher mean scores in comprehension (see Supplementary Table S7 for a summary). To reduce the influence of the test leader, only specific prompts are admissible, as stated in the manual (Gagarina et al., 2019). The maximum scores for telling and comprehension are 17 and 10 points, respectively. For this study, we used the baby birds stimuli (Gagarina et al., 2019).

Following the manualized structure of MAIN, children were encouraged to first tell the story and subsequently respond to

comprehension questions. For the telling task, the test leader first presented all six pictures, and when the child was ready, the story was folded and only the first two pictures were shown. Following this, when the child was ready to continue, then pictures 3 and 4 were shown, and finally, all six pictures were visible to the child. During the storytelling session, the pictures were turned away from the test leader, so that the child could not rely on joint attention or pointing. All the pictures were visible to the test leader and participant when the comprehension questions were asked. Each narrative was audio-recorded and subsequently transcribed verbatim. To investigate the inter-rater agreement for the telling and comprehension scales of MAIN, Cohen's kappa (Cohen, 1960) was calculated. The Cohen's kappa value for the telling scale ranged from 0.54 to 1 with a mean of 0.72. A single item on the telling scale received an estimated Cohen's kappa value of 0.29. The divergent kappa values were the result of different interpretations of this item by the first author and the external rater. Hence, the first author rescored that item for all participants. The kappa value for the comprehension scale ranged from 0.68 to 1.00, with a mean of 0.92. At one preschool, the MAIN comprehension test was missing in nine instances owing to systematic error in sampling. Cronbach's alpha reliability was 0.59 and 0.67 for telling and comprehension, respectively (Table 2).

2.3. Design and analysis

To test the factor structure of our measures, we used structural equation modeling (SEM) techniques through Mplus 8.4 (Muthén and Muthén, 1998). The latent modeling of variables enables comparison between different scales and it has the advantage of measuring these relationships without error (Little, 2013). Model fit was assessed using several fit indices, including the comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Exact fit was expected with a nonsignificant chi-square ($p > 0.05$). To indicate good fit, RMSEA was expected to be below 0.06, SRMR, below 0.08, and CFI, close to or above 0.95 (Hu and Bentler, 1999). Modification indices were inspected to identify potential model fit improvement, such as by removing items or allowing measurement errors to correlate. Items with <0.30 factor loading or exhibiting nonsignificant factor loading were considered in need of adjustment. Given the sample size and the number of parameters, the indicators for the expected latent constructs were aggregated into parcels (Little et al., 2002). Parceling has been suggested to stabilize the estimates of parameters and improve model fit (Matsunaga, 2008), and it is appropriate when applied correctly (Little et al., 2013; Marsh et al., 2013). Parceling may be suitable when the purpose is to understand the construct and its relation to other constructs (Little et al., 2013), as in this case. The allocation of each item to its respective parcel was based on the suggested macrostructural components of MAIN, i.e., the Goal, Attempt, Outcome, and IST subscales of the telling and comprehension constructs. The telling instrument of MAIN was aggregated into a single-item construct (A2–A16), wherein items A0 and A1 were omitted, as they diverged from the other macrostructural components, i.e., they were part of the introductory portion of the story (setting and place). Comprehension was parceled based on the macrostructural IST component (items D2, D5, and D8) and the Goal component (D1, D4, and D7). Items D3, D6, and D9 were excluded from the model because they were dependent on the previous answer being correct. Item D10 was excluded from the model, as it did not match the other included macrostructural components, although this item is reported separately as it corresponds to a general understanding of the whole narrative. Parceling technique was also applied for the BPVS-2 and Vocabulary depth, with three equivalent parcels, based on random allocation to the respective parcel (BPVS-2 40 items per parcel and Vocabulary Depth 12 items per parcel). Using a multiple indicators multiple causes model (MIMIC) approach (Kline, 2016), the latent constructs were regressed on the covariates of gender and additional language background in separate models. The MIMIC model includes, apart from Confirmatory Factor Analysis (CFA), dummy variables that are regressed from the construct they are believed to influence. The regression of a dummy variable from a latent construct result in a y-standardized estimate that can be interpreted as Cohen's d, indicating the standardized score difference between the assigned groups (Brown, 2015). In this case, we applied the grouping for the variables gender (boys = 0 and girls = 1) and language background (0 = At least one caregiver is a native speaker of Swedish and 1 = No caregiver is a native speaker of Swedish, i.e., additional language learner). For the categorical confirmatory factor analysis, we used the weighted least square mean and variance adjusted estimator (WLSMV), whereas, for the full model, we used the maximum-likelihood estimator (ML). Descriptive statistics and Kappa values were computed using IBM SPSS Statistics (version 26). The majority of the missing language data (approximately 8%) was a consequence of children not being present at preschool during testing, this was handled in Mplus through Full-information Maximum Likelihood.

3. Results

The descriptive and inferential statistics of all included instruments are available in Table 3 with splits on language

TABLE 2 Language and well-being measures: means, standard deviations (SD), reliability, and score distribution of the raw scores.

Variable (maximum)	Mean	*SD*	Range	α	Skewness	Kurtosis
BPVS-II (120)	46.47	14.41	20-92	0.94	0.36	0.20
Vocabulary Depth (36)	6.27	5.58	0-21	0.73	0.84	−0.13
MAIN-telling (17)	4.76	2.37	0-10	0.59	−0.35	−0.32
MAIN-comprehension (10)	5.0	2.27	1-10	0.67	0.02	−0.72
HIFAMS (14)	10.12	2.57	5-14	0.49	0.16	−1.03

BPVS-II, British Picture Vocabulary Scale II; MAIN telling, The Multilingual Assessment Instrument for Narratives, narrative telling; MAIN comprehension, The Multilingual Assessment Instrument for Narratives, narrative comprehension; HIFAMS, How I Feel About My School.

TABLE 3 Descriptive and inferential statistics of measures with split on language background and gender.

	CGNS		CLOTS				Boys		Girls			
Measure	*n*	*M* (*SD*)	*n*	*M* (*SD*)	*t* (*p*)	ES	*n*	*M* (*SD*)	*n*	*M* (*SD*)	*t* (p)	*ES*
BPVS-II	26	55.0 (14.04)	51	42.12 (12.65)	4.07 (<0.001)	0.98	34	44.5 (13.14)	43	48.02 (15.32)	−1.07 (0.290)	-
Vocabulary depth	24	8.92 (5.76)	46	4.89 (5.01)	3.03 (0.003)	0.76	28	6.5 (6.12)	42	6.12 (5.26)	0.28 (0.782)	-
MAIN-telling	25	5.16 (2.39)	49	4.78 (2.2)	1.15 (0.254)	-	32	4.13 (2.32)	42	5.24 (2.32)	−2.04 (0.045)	0.48
MAIN-comp.	25	5.48 (2.4)	40	5.22 (2.49)	1.12 (0.280)	-	28	5.07 (2.1)	37	4.95 (2.46)	0.22 (0.827)	-
HIFAMS	26	10.50 (2.3)	51	9.92 (2.5)	0.97 (0.332)	-	34	10.29 (2.82)	43	10 (2.15)	0.56 (0.577)	-

CGNS, At least one caregiver is a native speaker of Swedish; CLOTS, No caregiver is a native speaker of Swedish; BPVS-II, British Picture Vocabulary Scale II; MAIN-telling, The Multilingual Assessment Instrument for Narratives, narrative telling; MAIN-comp, The Multilingual Assessment Instrument for Narratives, narrative comprehension; HIFAMS, How I Feel About My School; *t* = independent samples *t*-test; ES, Effect size Cohen's d.

TABLE 4 Correlation (r) between narrative skills, vocabulary, well-being, and SES index.

Variable	n	1	2	3	4	5	6	7
1. MAIN Telling	74	-						
2. MAIN comprehension/Goal	65	0.51**	-					
3. MAIN comprehension/IST	65	0.32**	0.36**	-				
4. Vocabulary Depth	70	0.34**	0.12	0.13	-			
5. BPVS-II	74	0.51**	0.31*	0.10	0.64**	-		
6. Well-being General	74	−0.08	0.03	−0.24	−0.11	0.01	-	
7. Well-being People	74	−0.17	−0.04	0.12	0.04	−0.08	0.16	-
8. SES-index	85	−0.20	−0.07	−0.17	−0.13	−0.10	0.40**	−0.05

MAIN telling, The Multilingual Assessment Instrument for Narratives, narrative telling; MAIN comprehension/IST, The Multilingual Assessment Instrument for Narratives, narrative comprehension Internal State; MAIN Narrative comprehension/Goal, The Multilingual Assessment Instrument for Narratives, narrative comprehension Goal; BPVS-II, British Picture Vocabulary Scale II; Well-being General, How I Feel About My School (HIFAMS) concerning general aspects of well-being; Well-being People, HIFAMS concerning aspects related to people; Higher Socioeconomic-index, increased level of disadvantage within the school district.
** $p < 0.01$, * $p < 0.05$.

background (CGNS = At least one caregiver is a native speaker of Swedish and CLOTS = No caregiver is a native speaker of Swedish) and gender (girls and boys), along with the results for the whole sample. Question D10 in MAIN, which represents the comprehensive understanding of the storyline, was analyzed separately. Regarding CGNS and CLOTS, 66.7% ($n = 26$) and 65% ($n = 16$) responded correctly to this question, and for males and females, the response rate for the correct answer was 78.6% ($n = 22$) and 55.6% ($n = 20$), respectively.

Table 4 displays the correlation between the parameters included in the modeling and the SES index. The SES index is a variable at the school level (see previous description). The correlation with the other variables is only possible at an aggregated level of analysis (Table 4). The correlation matrix shows that the SES index had a negative association with all language measures, although it was not significant. The Well-being General with general aspects of well-being in preschool had a significant positive correlation with the SES index ($r = 0.39$, $p < 0.001$).

3.1. Structural model of language and well-being

A two-factor structure of well-being showed the best fit to data, when the nonsignificant item, W2 was dropped. The two-factor structure was divided into general aspects of well-being (Well-being General, items W1, W4, and W7) and aspects related to people (Well-being People, items W3, W5, and W6). The two-factor model provided a good fit to the data ($\chi^2 = 9.802$, df = 8, $p = 0.280$, RMSEA = 0.054, $CI_{90} = 0.000 - 0.151$, CFI = 0.95, and SRMR = 0.079), including significant factor loadings ($p < 0.05$) ranging from $r = 0.39$ to 0.77. For the language measures, we assessed the narrative indicators from MAIN and the two vocabulary measures of BPVS-II and Vocabulary Depth. The parceling technique was applied to create stable measures for both the narrative and vocabulary measures. The model with only language variables showed a good fit to data ($\chi^2 = 32.515$, df = 26, $p = 0.177$, RMSEA = 0.057, CI = 0.000 − 0.112, CFI = 0.982, SRMR = 0.059), and was deemed acceptable for progression.

The structural equation model addressed the first research question (RQ1) of whether oral language skills were associated with self-reported well-being. The model fit is presented in Table 5 and the standardized factor loadings, are in Table 6. Our model could not support that the well-being latent constructs (Well-Being General or Well-being People) had a significant correlation with either the Vocabulary or Narrative construct (Well-being General with Vocabulary: $r = 0.002$, $p = 0.989$; Well-being General with Narrative: $r = -0.06$, $p = 0.756$; Well-being People with Vocabulary: $r = -0.10$, $p = 0.222$; Well-being People with Narrative: −0.23, $p = 0.222$).

In order to respond to the second research question (RQ2), regarding the association with individual factors, the additional language background (i.e., if any caregiver is a native speaker of Swedish) and gender were added to the structural model as dummy

TABLE 5 Structural model fit indices with ML estimator for 3 models.

Models	χ^2	df	CFI	SRMR	RMSEA	90% CI RMSEA
Lang+wb model	105.103 (p 0.102)	88	0.955	0.077	0.050	0.000 0.083
+Home Language	115.349 (p 0.125)	99	0.959	0.076	0.046	0.000 0.078
+ Gender	113.409 (p 0.153)	99	0.962	0.076	0.043	0.000 0.076

CFI, comparative fit index; SRMR, standardized root mean square residual; RMSEA, root mean square error of approximation; Lang + wb, language and well-being model; + Home language, caregiver language background added as dummy variable; + Gender, gender added as dummy variable.

TABLE 6 Standardized factor loadings for structural model with home language background added as dummy variable.

Factor	Indicators	Standardized estimates	S.E.	Est./S.E.	p-value
Narrative	Telling	0.911	0.100	9.307	<0.001
	Comprehension/IST	0.372	0.130	2.999	0.003
	Comprehension/Goal	0.602	0.112	5.868	<0.001
Vocabulary	Vocabulary Depth_p1	0.646	0.072	8.911	<0.001
	Vocabulary Depth_p2	0.451	0.098	4.570	<0.001
	Vocabulary Depth_p3	0.678	0.067	9.950	<0.001
	BPVS-II_p1	0.922	0.022	41.304	<0.001
	BPVS-II_p2	0.917	0.024	38.468	<0.001
	BPVS-II_p3	0.922	0.22	41.508	<0.001
Well-being general	W1	0.524	0.088	5.987	<0.001
	W4	0.479	0.086	5.593	<0.001
	W7	0.428	0.076	5.661	<0.001
Well-being people	W3	0.456	0.084	5.436	<0.001
	W5	0.471	0.082	5.752	<0.001
	W6	0.478	0.091	5.221	<0.001

Telling, The Multilingual Assessment Instrument for Narratives (MAIN) telling; Comprehension/IST, MAIN comprehension of macrostructure concerning Internal State Term; Comprehension/Goal, MAIN comprehension of macrostructure concerning Goal; Vocabulary Depth, Depth of Vocabulary with parcel number; BPVS-II, British Picture Vocabulary Scale-II with parcel number; Well-being General, How I Feel About My School (HIFAMS) concerning general aspects of well-being; Well-being People, HIFAMS concerning aspects related to people.

variables. For RQ2, language background (0 = At least one caregiver is a native speaker of Swedish and 1 = Additional language learner) yielded negative loading on all constructs, but they were only significant for the vocabulary construct (Vocabulary on Language Background: $d = -0.932$, $p < 0.001$), with a good model fit ($\chi^2 = 115.349$; df = 99; $p = 0.125$; RMSEA = 0.046; CFI = 0.959; SRMR = 0.076). The model is presented in Figure 1.

A model with only gender added as a covariate was also tested (boys = 0; girls = 1), but had no significant loading on any of the well-being (Well-being General on gender: $d = -0.32$, $p = 0.340$; Well-being People on gender: $d = -0.29$, $p = 0.388$) or language constructs (Narrative on gender: $d = 0.43$, $p = 0.078$; Vocabulary on gender: $d = 0.16$, $p = 0.494$). Adding the dummy variables of language background and gender to the model of well-being and language skills had only a minor effect on model fit (see Table 5). The introduction of dummy variables had only minor effect on the previously observed correlations and significance levels between the latent constructs. In sum, the introduction of dummy variables did not lead to any drastic changes in model fit, leading to the conclusion that the suggested model has a good fit in relation to observed data. We also specified a dummy variable of caregiver education, based on results from caregiver questionnaire ($n = 50$). This model with dummy variable of caregiver education (0 = No tertiary education; 1 = Tertiary education) received poor model fit and nonsignificant loadings.

In order to verify our results and assess potential differential processes in our data, we conducted some post hoc analyses. First, a Monte Carlo simulation (Muthén and Muthén, 2002), of the model (Figure 1) demonstrated high power on all the indicators (range 0.996 to 1), except for the estimated coefficient Vocabulary (Voc) on Language Background, which demonstrated a power estimate of 0.473. However, the estimated effect size ($d = 0.93$) is large enough for the null hypothesis to be rejected. Second, invariance testing was performed for the included constructs (vocabulary, narrative ability, and well-being), based on our subgroups of language background and gender. The invariance testing indicated no differences between the respective groups. Third, we performed a multigroup analysis for our included constructs of Vocabulary, Narrative skills, well-being General, and well-being People, with grouping on language background (see Supplementary Table S8). In order to retain sufficient power, we performed these analyses with three latent constructs at the time, imposing restriction of equivalence, examining means, covariate structure, and comparing χ^2 value with an unrestricted model. The means differed significantly concerning vocabulary, where the children in the additional language learner group (CLOTS) showed lower mean than children with at least one caregiver with Swedish as their native language (CGNS) ($\text{Mean}_{\text{diff}} = -1.09$, $t = -3.68$, $p = < 0.001$). One correlation between the latent constructs indicated that children with one caregiver being native speaker of Swedish had a negative

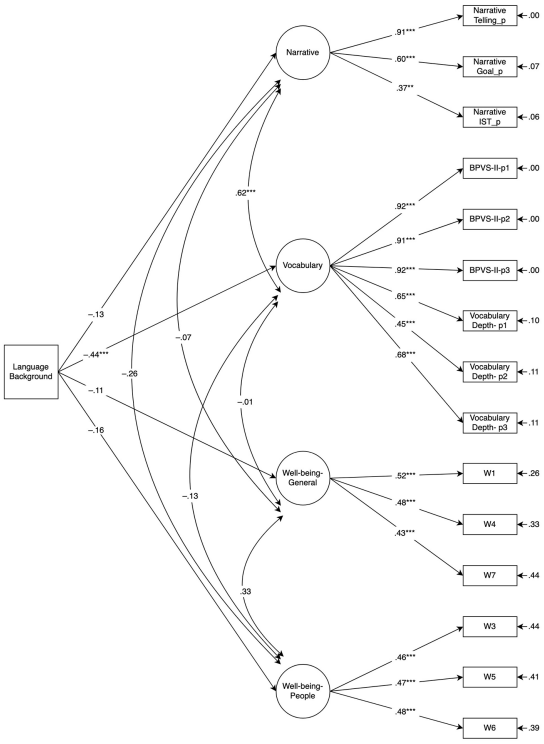

FIGURE 1
MIMIC model with dummy variable of language background. The model includes standardized estimate coefficients for the latent constructs of general well-being (well-being general), well-being related to people (well-being people), vocabulary, and narrative skills (narrative). For the dummy variable of language background is coded as 0=At least one caregiver is a native speaker of Swedish and 1=additional language learner. **=p<0.01; ***=p<0.001.

association between narrative ability and well-being related to People ($r = -0.74$, $p = < 0.001$). We have also provided a correlation table available as Supplementary material, with a split on language background (Supplementary Table S9).

4. Discussion

Several factors affect early language development, including exposure and interaction with others. Previous studies have shown that early language skills can be influenced by both the home language environment and socioeconomic factors, but less is known about the relationship between language skills and well-being in preschool settings. The purpose of this study was to investigate the relationship between oral language skills and self-reported well-being before formal school entry in a community sample of five-year-old children. The rationale for including several language measures and not only vocabulary was based on prior studies indicating that standardized vocabulary tests, based on norms from majority language speakers, are difficult to interpret for additional language learners. A vocabulary test has among several advantages to be easily administrated and comprehensible, but it may not reflect a comprehensive picture of language ability especially for additional language learners whose general language skills can be better assessed by other means. For this reason, we added a narrative test that has demonstrated promising results when comparing samples with different language backgrounds, based on the macrostructures of narratives. Following former studies involving combined narrative and vocabulary assessment, we expected a positive relationship between the two constructs of language and lower scores on vocabulary measures for additional language learners. In this study, we employed a structural equation modeling technique to explore the relationship using latent constructs, which is preferable as this allows estimation without error (Brown, 2015).

4.1. The relationship between language skills and well-being

Our study included constructs of subjective well-being in preschool related to people and general aspects as well as two language latent variables of vocabulary and narrative ability. Concerning RQ1, we found no significant association between language skills and the self-reported well-being constructs of general well-being in preschool (Well-being General) or people-related well-being in preschool (Well-being People) through our structural modeling. However, through post hoc analysis, we found that higher narrative ability resulted in lower well-being related to people for children with at least one caregiver being a native speaker. Possible and only tentative interpretations of the unexpected interaction effect between well-being related to people and narrative ability are that these children may want a more stimulating educational environment; another is that maybe there were organizational shortcomings in their preschools and the children with higher skills were capable to give a negative evaluation, while children with lower language skills to a larger extent may have missed the chance to give a negative answer because they could be more cautious in these situations and maybe could try to please the adults with a positive answer. More research is needed in order to understand these relationships. Since national evaluations (SSI, 2018; SOU, 2020) have found a variation in quality in preschools it would be of value in future studies to include assessments and quality measures at the preschool.

The suggested risk of lower language skills and its association to lower self-reported well-being in preschool is not supported by this study. As well-being is a multifaceted construct in combination with a more volatile emotional state for young children, it is a delicate task to capture this construct. Another interpretation could be that the results of HIFAMS could be influenced by the assessment situation, which is unusual for most children. Nevertheless, children in Swedish preschools are familiar with questions regarding their opinion (Sheridan and Samuelsson, 2001; Markström and Halldén, 2009). The next step in order to develop knowledge on the well-being measure in young children could be to address HIFAMS for a clinical population or with a known at-risk status. Other alternatives could be to apply repeated measures to understand the test re-test reliability of self-reported well-being at this age or investigate the concurrent validity of HIFAMS with other self-reported measures.

4.2. Language, well-being, and the association with individual variables

Related to our RQ2 concerning the influence of gender and language background, we introduced both as dummy variables.

Only the model with language background added as dummy showed a significant negative effect on vocabulary for children of no caregiver being a native speaker of Swedish. This effect was expected and the vocabulary construct in itself showed a moderate to strong correlation between constructs, in line with the findings of Hadley et al. (2019). This correlation was somewhat stronger than the one found in Strasser and Del Río (2014). For BPVS-II, we found that the mean scores were lower than the scores obtained in previous applications of the test (e.g., Lyster et al., 2010; Karlsen et al., 2017).

For the narrative construct based on telling and comprehension, the structural model indicated a nonsignificant association with the language background. The results from the structural model are mainly in line with those of earlier studies, including narrative and vocabulary outcomes (Uccelli and Páez, 2007; Cleave et al., 2010; Blom and Boerma, 2020), in which additional language learners achieve lower scores on standardized language tests as BPVS, but are on par with native language speakers on narrative measures as MAIN. However, our sample also presented lower mean scores than other studies, based on MAIN in Swedish (see Supplementary Table S7). The mean MAIN scores in our study are within the range of one standard deviation compared with other samples, but in a few instances, the difference exceeds −1 *SD*. Altogether, it appears that our sample had a slightly lower mean performance in narrative skills than did similar samples of children of the same age. Our analysis did not support a relationship between language variables and gender. The association of gender and language scores showed that girls present a slightly higher mean score for the standardized language test (BPVS-II), whereas the boys obtained a slightly higher mean score for the vocabulary depth measure. The differences in the vocabulary measures based on gender were small and nonsignificant.

In relation to our dummy variable of language background, this was an additional measure that we introduced as the parental reports had a low response rate. One could argue that our language background variable is not refined enough and thereby may not reflect differences within the group of children have one parent being a native speaker of the majority language. On the other hand, when examining the vocabulary outcomes, our results seem to reflect previous studies that include children with native language backgrounds of the majority language and additional language learners. The optimal situation would still be to have a higher response rate for a parental questionnaire to make more distinctive conclusions concerning the influence of language background.

Lastly concerning well-being, the well-being General construct focusing on overall aspects of well-being in the preschool environment (i.e., on my way to preschool, at the playground, and when I think about my preschool) had a significant moderate correlation with the SES index. Higher scores on the SES index (SNAE, 2019b) indicate that the preschool is situated in a school district with more poverty. Children from preschools in socially disadvantaged areas reported themselves as happier in preschool than children from less disadvantaged areas did, when asked about general aspects of preschool. This could be interpreted to mean that children living in disadvantaged areas to a larger degree experience the preschool environment as contributing to their well-being.

4.3. Well-being and childhood development

We would not expect an adolescent or adult to perform at their best when feeling troubled or unwell, in school, or at work. Instead, the notion that subjective well-being and academic achievement are related is supported, although their reciprocal relationship is seemingly complex (Bücker et al., 2018). Similarly, we would not accept that children's subjective well-being could be fully represented by external raters or measures. Feeling well and being at ease are essential to prosper and develop, for young children as well. Although several studies have found a positive association between language skills and well-being or socioemotional aspects of development, we could not find such association between language skills and well-being. This can be related to additional aspects that directly or indirectly influence language and well-being. One known stage of language development for additional language learners is known as the silent period (Gibbons, 1985), where children become silent when processing and learning an additional language. Being silent and less efficient to communicate with the environment could negatively affect the well-being if this results in withdrawal from peers (Gibbons, 1985). In our study, it is possible that the participants being additional language learners had acquired sufficient language skills both to feel better in the preschool environment but also to take part in the assessment.

Some studies have also observed that language use in Swedish preschools may be influenced by the language background of the children (Puskás and Björk-Willén, 2017; Larsson et al., 2022). For instance, children with similar language background may play with each other, using their minority language during a large part of the day, due to the tradition of free play as an activity (Puskás and Björk-Willén, 2017). It is not surprising that children want to play with other children that they can interact with, but such a separation from others could potentially influence the well-being related to other people in preschool. Also, socioemotional competence (Sun, 2019; Ertanir et al., 2021) and shyness (Rivera Pérez et al., 2022) may affect the possibilities for additional language learners to interact with peers and staff, and in some sense hampering language development.

4.4. Early intervention

Former studies have indicated that children from disadvantaged and additional language backgrounds are at higher risk of achieving lower language scores than their peers (Bialystok et al., 2010; Fernald et al., 2013; Lonigan et al., 2013; Gilkerson et al., 2017). Given that early experiences influence later outcomes, and that the educational system in Sweden has become less equitable and does not compensate for student background as it previously did (SNAE, 2012, 2017; OECD, 2015), this situation calls for attention.

The gap in early language ability, in terms of word knowledge in this sample, indicates that there is a scope for improvement in educational provisions in early childhood education in order to support vocabulary growth effectively. Specifically, concerning linguistic input, previous international studies have reported an association between the amount of input from native speakers and the additional language learners' proficiency in the majority language (Paradis, 2011; Place and Hoff, 2011, 2016). Consequently, the reports

of limited language skills of staff in preschool (SOU, 2020), as well as the lower proportion of qualified teachers in areas of disparity (Garvis and Lunneblad, 2018) in our educational context indicate that these shortcomings may contribute to maintaining these gaps in early language abilities.

In order to equip children with sufficient language skills before formal school entry, several aspects need to be taken into consideration. Linguistic input (Uccelli et al., 2019; Hoff, 2021), preschool quality in terms of teacher proficiency (Mashburn et al., 2008), access (Garvis and Lunneblad, 2018), and opportunities to interact and use language (Hoff, 2021) contribute to strengthening early language skills. In practice, teachers may offer children high-quality teaching, for instance, by interactive book reading that enables children to encounter rich linguistic input, which strengthens early language skills, including vocabulary (Fitton et al., 2018; Larson et al., 2020).

4.5. Strengths and limitations

The present study has several strengths, including the standardized procedure of data collection, which enabled a high degree of control as well as comparison with both past and present studies. Moreover, the study assessed several language domains, including both narrative ability and vocabulary skills, providing a more comprehensive picture of language ability than a single outcome. In addition, we included preschools from various communities, with a diverse proportion of language backgrounds and socioeconomic distributions. The study limitations concern the missing data from the caregiver questionnaire, as this would have improved the possibilities of comparing children in greater detail. The narrative assessment requires complex cognitive processing and standardized vocabulary tests have shown a strong association with verbal IQ, however, this study did not include a separate cognitive measure, which could have strengthened the study quality and contextualized the language performance and well-being. Another limitation concerns the sample size. The relationship between language and well-being should be investigated in a larger sample.

The applied analysis with structural equation modeling enables the estimation of the relationships between latent constructs, which is a more effective approach than using the raw scores for each measure. In addition, the SEM analysis generates the estimated results with separate error measurement (Brown, 2015; Kline, 2016), which is an advantage compared to other analytic approaches (such as path models). Lastly, we were unable to incorporate socioeconomic data in the structural model as the caregiver questionnaire was deemed missing with a non-random pattern and the SES index was too imprecise to use at the individual level. More research is needed in order to understand the relationships between well-being in preschool and language skills.

5. Conclusion and implications

The current study could not support an association between language skills and subjective well-being for 5-year-old children, in preschool. Post hoc analysis indicated that children with more advanced narrative skills reported lower well-being related to persons in preschool. The interpretations of this relationship are only tentative and more research is needed on this matter. We hypothesize a relationship to contextual circumstances that can affect how children perceive their social climate.

The results from our structural equation modeling show that children from homes with native speakers of the majority language had significantly higher scores in vocabulary knowledge than additional language learners. On the narrative test, the performance was not significantly associated with language background. Narrative assessment of macrostructural components seems to provide an expression of language abilities that allows for a more unbiased comparison of performances, irrespectively of language background. Although these performances may not represent the total linguistic competencies, the results underline that vocabulary skills are an important area to address in early childhood education. Finally, within our study, children from preschools in socially disadvantaged areas self-reported a higher degree of well-being concerning general aspects of the preschool environment, indicating that preschool can play an important role in their prosperity.

Data availability statement

The datasets presented in this article are not readily available because the permission obtained only included the use of the data for the present study as well as associated studies by RR. Requests to access the datasets should be directed to rasmus.riad@specped.su.se.

Ethics statement

The studies involving human participants were reviewed and approved by Swedish Ethical Review Authority (#2019-02977). Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

RR, MA, ES, and SB contributed to the conception and design of the study. RR and MA performed the statistical analysis. RR wrote the first draft. ES and MA obtained the principal research funding. All authors contributed to manuscript revision, and read 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.

Publisher's note

Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2023.963180/full#supplementary-material

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