



School Mobility and High School Dropout: Seasonal and Developmental Timing Matters

Julia Stamp^{1*}, Catherine Frigon², Véronique Dupéré², Eric Dion³, Elizabeth Olivier² and Isabelle Archambault²

¹ Département de Psychologie, Université de Montréal, Montréal, QC, Canada, ² École de Psychoéducation, Université de Montréal, Montréal, QC, Canada, ³ Département d'Éducation et Formation Spécialisées, Université du Québec à Montréal, Montréal, QC, Canada

OPEN ACCESS

Edited by:

Joseph Madaus,
University of Connecticut,
United States

Reviewed by:

Anica Gwenell Bowe,
Oakland University, United States
Yuane Jia,
Rutgers Biomedical and Health
Sciences, United States

*Correspondence:

Julia Stamp
julia.stamp@umontreal.ca

Specialty section:

This article was submitted to
Special Educational Needs,
a section of the journal
Frontiers in Education

Received: 01 March 2022

Accepted: 11 April 2022

Published: 29 April 2022

Citation:

Stamp J, Frigon C, Dupéré V,
Dion E, Olivier E and Archambault I
(2022) School Mobility and High
School Dropout: Seasonal
and Developmental Timing Matters.
Front. Educ. 7:887617.
doi: 10.3389/educ.2022.887617

Non-promotional school changes are fairly common, and although most mobile students successfully adjust to new peers, routines, and teachers, school mobility can sometimes indicate risk of disengagement and even dropout. To identify which mobile students are at risk and in need of support, it is important to differentiate when mobility may pose a threat and when it does not. The goal of this study was to examine the role of temporality in the relationship between non-promotional school changes and high school dropout, in a sample of $N = 545$ secondary school students (52% boys; $M_{age} = 16.3$ years) followed over a 6-month period. Participants were recruited in 12 socioeconomically disadvantaged public secondary schools with high dropout rates in Quebec (Canada). Logistic regression analyses (taking into account key potential confounding variables) revealed that non-promotional secondary school changes were associated with dropout, but only when they occurred during school years or in later secondary grades, and not when they occurred between school years (i.e., during the summer break) or in early secondary grades. These findings indicate that non-promotional school changes occurring at certain key time points are clear indicators of increased risk of high school dropout. Students who experience such changes would benefit from targeted support to help them integrate into their new school and cope with other problems often associated with mobility.

Keywords: high school drop-out, school mobility, inclusive education, risk prevention, educational diversity

INTRODUCTION

School mobility refers to a student's entry into a new school. Whereas promotional school mobility refers to changes expected within a curriculum (e.g., a student moving from elementary to high school), non-promotional school mobility refers to a student moving for any other number of reasons (e.g., family relocation; Rumberger, 2015). Non-promotional mobility is widespread; in the United States, most students make at least one non-promotional school change during their schooling career (see Rumberger, 2015). Even though many students undergoing such transitions adapt well, other mobile students do not. Specific forms of mobility occurring at sensitive time during secondary school could signal an increased likelihood that these adolescents will not integrate and even stop attending school, leading to eventual dropout (Rumberger, 2015; Welsh, 2017). The goal of this study is to examine forms of mobility thought to be particularly problematic, specifically, mobility during the school year and in the late high school years.

Mobility During the School Year

Non-promotional school mobility may be particularly trying when it occurs during a school year, that is, when it does not happen over the summer break (Rumberger, 2015; Welsh, 2017). Mobility during school years is less common than mobility between school years, by a proportion of about two-to-one (Rumberger, 2015). This probably reflects a general belief shared by parents, adolescents, and educators that it is preferable to enter a new school at the beginning of a school year, when all students are reshuffled in new groups, and when academic learning ramps up gradually. In contrast, mobility occurring during a school year is likely to require more adjustment from mobile adolescents, who must find their place in already established routines and peer groups and jump in a moving train in terms of academic learning. Only a handful of studies compare within- and between-year mobility (Welsh, 2017). These rare studies are generally consistent in demonstrating that mobility is generally disruptive and within-year mobility is particularly problematic for learning and achievement), presumably for high school dropout as well, although this later outcome has not been directly measured. Thus, distinguishing within- and between-year mobility has been identified as a priority for future research investigating mobility and high school dropout (Rumberger, 2015).

Mobility in the Late High School Years

Non-promotional school changes occurring in late high school might also be particularly trying for school engagement and perseverance, compared to earlier mobility. School changes become less common as students advance in age, potentially because parents of adolescents change jobs, homes, and life partners less frequently than parents of younger children (e.g., Gottman and Levenson, 2000; Anderson et al., 2014). To illustrate, in the United States, school mobility in the past 2 years was estimated at 35% in 4th grade, 21% in 8th grade, and 9% in 12th grade (see Rumberger, 2015). Besides standing out as an uncommon phenomenon, mobility in late high school is also potentially particularly challenging academically and socially as it occurs at a time when curriculums are increasingly differentiated across schools, and when peer groups have had several years to crystallize (Herbers et al., 2013; Anderson et al., 2014). In addition, in late high school, students reach an age at which school is no longer compulsory. For some, dropping out thus becomes a practicable solution for escaping the acute discomfort sometimes felt after entering a new school (Dupéré et al., 2015).

Despite the implications of developmental timing, very few studies have compared the risk of dropout associated with school mobility in late high school vs. in earlier years. The few extant studies are based on decades-old data from a single country, the United States, where mobility is uncharacteristically common compared to other Western countries (Gillespie, 2017). One study based on an analysis of United States data collected in the late 1980s and early 1990s found that mobility in late high school (i.e., in the 11th or 12th grade) was more likely to lead to negative outcomes, including dropout, than mobility earlier in secondary education (Swanson and Schneider, 1999). Similarly,

in a Chicago-based cohort of low-income, minority children born between 1979 and 1980, Herbers et al. (2013) found that mobility between grades 4 and 12 was negatively associated with highest grade completed, but not mobility in earlier grades (i.e., prior to grade 4). Further research is needed to determine whether similar patterns hold in contemporary cohorts and in other national contexts, to gauge the current relevance of mobility in late high school as a signal for dropout vulnerability.

Mobility as a Risk and a Marker of Risk

Changing schools at unusual times may be challenging in and of itself, but it is likely to also indicate other underlying risks. Unexpected forms of mobility are often triggered by family or personal crises like divorce and separations, residential evictions, school expulsions, or untenable bullying situations (Rumberger, 2015). Under such circumstances, school mobility is the visible part of deeper underlying problems. Existing findings suggest that the moderate positive association between non-promotional transitions and dropout reflects both concurrent risks as well as the impact of mobility itself, and are thus consistent with the idea that mobility is both a risk and a marker of risk (e.g., Gasper et al., 2012).

Even in instances when mobility results from other issues and is not the main challenge affecting students, it can still orient educators toward students at a heightened risk of dropout and in acute need of support (Dupéré et al., 2015). Identifying which school transitions signal high risk, specifically as a function of when they happen – a readily available information for schools – could lead to substantial improvement in schools' capacity for on-time detection of vulnerable students and effective support while students are still accessible.

The Present Study

The goal of this study is to examine how timing influences the mobility-dropout relationship, with a focus on two crucial timepoints, seasonal timing (i.e., whether mobility occurs between or within school years) and developmental timing (i.e., whether it occurs in early or late secondary school). The association between school mobility and high school dropout is examined while statistically controlling for potential confounders typically considered in the mobility literature, including basic sociodemographics (i.e., sex, age, immigration status, visible minority, parental education, maternal and paternal employment, and separated/divorced parents) and major pre-existing risk factors for dropout (comprising grade retention, school engagement, and grades), as well as attending a special education class (Rumberger, 2011).

METHODS

Participants and Procedures

Data comes from a longitudinal study designed to investigate the factors precipitating school dropout amongst at-risk youth. Participants were recruited from 12 socioeconomically disadvantaged, French-language public secondary schools with high dropout rates ($M = 36\%$ at the time of data collection)

within metropolitan Montreal (Canada) and surrounding areas (Dupéré et al., 2018, 2021). Each school participated in the project over one school year, in 2012–2013 (three schools), 2013–2014 (four schools), or 2014–2015 (five schools). In each school, the participating adolescents were assessed twice. First, at the beginning of the school year (T1), all the students aged 14 or older were invited to fill in a short screening questionnaire assessing sociodemographics and dropout risk ($N = 6,749$, $M_{age} = 15.9$ years old, 53% males, participation rate >97%). Second, about 6 months later (T2), a selected subsample of students was individually interviewed ($N = 545$, $M_{age} = 16.5$ years old, 56% males, participation rate = 70%).

Participants interviewed at T2 were selected among those screened at T1, with the goal of oversampling high school dropouts. That is, all the students who, according to school records, dropped out of their secondary school in the few months following the initial screening were invited to participate in the interview. As a result, dropouts represented a third of the sample. To understand how the schooling trajectories of these dropout adolescents differed from that of persevering peers, two additional subgroups were selected among the screened students as comparison groups. A *first matched at-risk comparison group* was formed by interviewing students with sociodemographic and dropout risk profiles similar to that of the interviewed dropouts, but who were still in school and persevering. This group was put together by selecting, after each interview with a dropout adolescent, a schoolmate of the same sex, enrolled in the same school and the same type of educational program (regular vs. special education), and with a similar score on the dropout risk index (see section “Measures”). When possible, matched peers were also from similar SES and ethnocultural backgrounds. A *second comparison group* included normative students with little to no identified risk of dropout based on a calculated dropout risk index. Normative students had a dropout risk score close to their school’s gender-adjusted average, calculated at the screening phase. The final sample consisted of 183 dropout adolescents, 183 matched peers, and 179 normative peers from diverse sociodemographic backgrounds (e.g., 34.7% of immigrant origin, see **Table 1** for further details).

Measures

Control Variables: Sociodemographics and Initial Dropout Risk (From T1 Screening)

Sociodemographic information was self-reported during the initial screening, with a focus on variables known to be associated with dropout and/or school mobility. This included participants’ sex (0 = female; 1 = male), age, and educational sector (0 = regular programming; 1 = special education). Family sociodemographics included family structure (0 = lives with both parents; 1 = parents divorced/separated), immigration status (0 = both parents born in Canada; 1 = at least one parent born outside Canada), visible minority status (0 = White; 1 = other), parental highest level of educational attainment (1 = elementary to 4 = university), and mother and father employment (0 = unemployed; 1 = employed).

Beyond sociodemographics, key risk factors for dropout were also considered via a validated dropout risk index comprising seven self-reported items (Archambault and Janosz, 2009), about participants’ average grade in language arts and Math, number of school years repeated, attitude toward school, importance of grades, educational aspiration, and perceptions of grades. These were combined to calculate a general dropout risk index. This index, which has a $M = 0$ and a $SD = 1$ amongst the general population of Quebec secondary school students, has shown good predictive validity in a population sample of about 35,000 adolescents (Archambault and Janosz, 2009). Its predictive validity has also been confirmed in the present sample, in which the index scores predicted dropout more effectively than official administrative data about grade repetition, truancy, failing grades, and disciplinary records (Gagnon et al., 2015).

Outcome: High School Dropout (From School’s Administrative Records)

A participant was considered as having dropped out once when one of the following was filed in their school record: (1) an official document signaling termination of studies, (2) unjustified school absence lasting at least 1 month, or (3) a transfer from secondary level studies to adult general education (GED-like programming). The latter were counted as having dropped out due to the fact that a considerable portion of these students never actually enroll into adult education, and of those who did, less than a third obtain a diploma (Gagnon et al., 2015). This decision was guided by research showing that those who do obtain a diploma through adult education are likely to face similar disadvantages to those faced by peers without a high school diploma (Heckman et al., 2014).

Mobility in Secondary Education (From T2 Interview Data)

School mobility was measured during the individual interviews. Research assistants asked participants about their educational history in secondary education, that is, between grades 7 and 11. This window corresponds to the structure of the Quebec education system, in which students directly transition from primary school that spans kindergarten to grade 6 to a 5-year secondary school that includes grades 7–11 (i.e., there is no middle school and no grade 12). Specifically, assistants asked participants to list all secondary schools attended and accompanying dates, including any changes or transfers. Based on this information, a count variable for number of school changes was compiled (range: 0–5; $M = 0.56$, $SD = 0.87$). For analytical purposes, a dichotomous version of this variable was computed, distinguishing participants who changed school at least once ($n = 208$, 38.2%) from those who never did.

The timing of school mobility was derived based on the dates of relevant school changes provided during the interviews. A first variable captured *seasonal timing*, that is, whether mobility occurred during the school year or the summer break. It was coded with a three-level dummy variable differentiating between participants who had never changed secondary schools ($n = 337$,

TABLE 1 | Participant characteristics.

	As a function of group membership							
	Overall (N = 545)		Dropout (n = 183)		Matched at-risk (n = 183)		Not-at-risk (n = 179)	
	M/%	SD	M/%	SD	M/%	SD	M/%	SD
Sociodemographics								
Male	52.3		54.1		54.1		48.6	
Age (at the interview)	16.3	0.9	16.5 _a	0.9	16.4 _b	1.0	16.0 _{a,b}	0.8
Immigrant status	34.7		32.8		35.0		36.3	
Visible minority	23.3		19.1		24.0		26.8	
Parental education ¹	2.6	1.0	2.5 _a	1.0	2.6	0.9	2.7 _a	1.0
Maternal employment	69.9		69.4		70.5		69.8	
Paternal employment	76.0		69.4 _a		80.3 _a		78.2	
Separated/divorced parents	58.2		69.9 _{a,b}		53.6 _a		50.8 _b	
School-related variables								
Special education	31.2		42.6 _a		45.9 _b		4.5 _{a,b}	
Dropout risk index	0.6	1.9	1.1 _a	2.1	1.3 _b	1.9	-0.6 _{a,b}	0.5

Means and percentages sharing subscripts in each row differ significantly across groups at $p < 0.05$, based on t -tests (for means) or χ^2 tests (for percentages).

¹Maximum level of education attained by one parent; 1 = primary to 4 = university.

61.8%), those who had changed at least once between school years but never during a school year (i.e., solely over the summer break; $n = 156$, 28.6%) and those who had changed at least once during a school year ($n = 52$, 9.5%). *Developmental timing* referred to whether mobility occurred during the early secondary grades (grades 7 and 8, corresponding to “cycle 1” or lower secondary school in the Quebec system) or in later grades (grades 9, 10, or 11, corresponding to “cycle 2” or upper secondary school in the Quebec system). Developmental timing was coded into a three-level dummy variable differentiating between students who had never changed schools ($n = 337$, 61.8%), those who had most recently changed schools in cycle 1 ($n = 146$, 26.8%), and those who had most recently changed schools in cycle 2 ($n = 62$, 11.4%).

In general, the distribution of the timing variables corresponds to expectations based on studies reviewed by Rumberger (2015). In these studies, school mobility is more common between than within school years and becomes less frequent as students advance in grades.

Analyses

Analyses were conducted using IBM Statistical Package for Social Sciences software (SPSS version 26.0). Multiple logistic regressions were used to examine the relationship between school mobility and dropout beyond control variables. Three successive models were performed, incorporating one mobility variable at a time alongside controls. The first one (Model 1) incorporated a variable representing school mobility regardless of timing. Then, this latter variable was broken down to capture the seasonal timing of school mobility (Model 2) and then the developmental timing of school mobility (Model 3). In all models, standard errors were bootstrapped to account for the clustering of students within schools (Cameron and Miller, 2015). All participants had complete data. Robustness checks were also conducted to gauge the stability of the results (see next section).

RESULTS

Bivariate Associations Between Control and School Mobility Variables and Dropout

Descriptive statistics (means with standard deviations and percentages) for control variables (sociodemographic and dropout risk index) as a function of group (dropout, matched at-risk, and not-at-risk) are shown in **Table 1**. As expected by design, there are few differences between students having dropped out and matched at-risk peers, and both these groups demonstrate generally higher levels of risks compared to normative peers, notably in terms of the dropout risk index.

Descriptive statistics as a function of group for the school mobility variables are presented in **Table 2**, with the results of ANOVA and χ^2 tests for continuous and dichotomous variables, respectively. As hypothesized, adolescents who dropped out experienced more school changes ($M = 0.78$, $SD = 1.03$; 48.6% with at least one change) than peers in the matched-at-risk ($M = 0.50$, $SD = 0.80$; 36.1%) and normative ($M = 0.40$, $SD = 0.71$; 29.6%) comparison groups. These differences were conditional on timing: compared to the two comparison groups, dropouts experienced more school changes during school years and in the upper secondary grades, but not between school years or during the early secondary grades. Overall, no significant differences emerged between the two comparison groups in terms of school mobility.

Multiple Logistic Regressions Predicting High School Dropout From School Mobility

Table 3 presents the results of three multiple logistic regressions assessing the school-mobility-dropout link beyond sociodemographic and school-related controls. Overall, the

TABLE 2 | School mobility as a function of group membership.

	Group			χ^2 /ANOVA test	
	Dropout cases (<i>n</i> = 183)	Matched controls (<i>n</i> = 183)	Contrasted controls (<i>n</i> = 179)	χ^2 /F	<i>p</i>
School mobility in secondary education					
Number of secondary school changes [<i>M</i> (<i>SD</i>)]	0.78 _{a,b} (1.03)	0.50 _a (0.80)	0.40 _b (0.71)	9.3	0.000
At least one secondary school changes (%)	48.6 _{a,b}	36.1 _a	29.6 _b	14.4	0.000
Seasonal timing: Secondary school change (%)					
Only between school years	30.6	28.4	26.8	0.6	0.726
At least once during a school year	18.0 _{a,b}	7.7 _a	2.8 _b	25.5	0.000
Developmental timing: Most recent secondary school change (%)					
In lower secondary grades (7th or 8th grade)	30.6	29.0	20.7	5.2	0.074
In upper secondary grades (9th, 10th, or 11th grade)	18.0 _{a,b}	7.1 _a	8.9 _b	12.4	0.002

Means and percentages sharing subscripts in each row differ significantly at $p < 0.05$.

bivariate associations between school mobility and dropout observed in **Table 2** remained significant in these models incorporating controls.

Specifically, Model 1 shows that having changed schools at least once during secondary education, regardless of timing, is positively associated with dropout above and beyond control variables. Model 2 shows that when the mobility variable is broken down as a function of seasonal timing, only mobility during school years (as opposed to between school years) is significantly associated with dropout, with a considerable effect size (OR = 3.56; 95% CI = 1.90–7.72). Finally, Model 3 shows that when the mobility variable is broken down as a function of developmental timing, only mobility in the late secondary school grades (as opposed to mobility in the early secondary grades) is significantly associated with dropout, again with a considerable effect size (OR = 2.47; 95% CI = 1.28–4.54).

Robustness Checks

Within-study robustness checks are recommended to gauge result generalizability in developmental research (Duncan et al., 2014). In the present study, the main regression models presented in **Table 3** were rerun in a subsample comprised of dropouts and matched at-risk peers only ($n = 366$), and separately for boys ($n = 285$) and girls ($n = 260$). The main results remained essentially the same: that is, in all models, mobility within a school year and in later grades remained significantly associated with dropout with rather large effect sizes, but not mobility between school years or in early secondary grades (full results available upon request).

DISCUSSION

The main objective of this study was to examine whether seasonal and developmental timing affected the school mobility-dropout relationship. Both aspects appeared relevant, as school mobility was linked with dropout only when it occurred at certain sensitive times. In line with theoretical expectations and (partial) previous findings (Rumberger, 2015; Welsh, 2017), adolescents who had changed school during, but not between, school years had odds of

dropping out 2.42 (95% CI = 1.28–4.54) times higher compared to participants reporting no school mobility. Also, adolescents who changed school in the later secondary school years had odds of dropping out 3.56 (95% CI = 1.90–7.72) times higher than peers who had never changed secondary school. These effects are considered large (according to Chen et al.'s criteria, 2010).

The Timing of School Mobility

Why is school mobility a marker of risk for high school dropout only under some circumstances? School mobility is likely to signal risk either when mobility itself is disruptive or when it is an indicator of other disruptive circumstances in adolescents' lives (Rumberger, 2015; Welsh, 2017). Mobility can be particularly disruptive in and of itself when it upends mobile adolescents' academic and social life. Mobile students must adjust to new curriculums and teaching styles while making new friends among already existing peer groups. Navigating these challenges might be particularly difficult in the middle of the school year, when academic routines and social habits are established, rather than at the beginning of the school year, when all students and teachers adapt to new, reshuffled groups and gradually settle into habits together. It might also be particularly difficult when mobility occurs toward the end of high school when peer groups have crystallized over several years and when curriculums generally become more specialized and differentiated (see Swanson and Schneider, 1999; Herbers et al., 2013). Mobility in later years vs. earlier grades also means that dropout can be contemplated as a feasible coping strategy, as schooling is no longer compulsory by the age of 16 in many jurisdictions, including in Quebec.

Parents and adolescents appear well aware of the particular challenges posed by middle-of-the-school-year and late high school mobility, and tend to avoid these, which are in fact much less common than between-school-year mobility and mobility in earlier grades, according to both the literature in general and the results of the present study (see Anderson et al., 2014; Rumberger, 2015; Welsh, 2017). Thus, families might opt for these two forms of mobility only in last resort, for instance, when mobility stems from unplanned changes triggered by sudden crises like divorce and separations, residential evictions, school expulsions,

TABLE 3 | Multiple logistic regression models linking school mobility and dropout ($N = 545$).

	Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI
School mobility in secondary education						
Regardless of timing						
At least one secondary school change	1.60*	(1.04–2.37)				
While considering seasonal timing						
Secondary school change						
Only between school years			1.20	(0.75–1.96)		
At least once during a school year			3.56***	(1.90–7.72)		
While considering developmental timing						
Most recent change						
In lower grades (7th–8th grade)					1.34	(0.85–2.14)
In upper grades (9th–11th grade)					2.42**	(1.28–4.54)
Control variables						
Sociodemographics						
Male	1.00	(0.66–1.51)	1.00	(0.67–1.55)	1.02	(0.65–1.50)
Age	1.45**	(1.16–1.84)	1.48**	(1.21–1.87)	1.43**	(1.16–1.78)
Immigrant status	1.28	(0.71–2.19)	1.41	(0.75–2.69)	1.30	(0.67–2.35)
Visible minority	0.72	(0.37–1.37)	0.65	(0.31–1.30)	0.73	(0.36–1.48)
Parental education ¹	0.98	(0.79–1.26)	0.98	(0.77–1.24)	0.97	(0.75–1.22)
Maternal employment	1.01	(0.63–1.63)	1.00	(0.64–1.64)	1.01	(0.66–1.59)
Paternal employment	0.71	(0.44–1.13)	0.75	(0.47–1.17)	0.71	(0.43–1.15)
Separated/divorced parents	1.84**	(1.25–2.93)	1.79**	(1.19–2.71)	1.80**	(1.18–2.85)
School-related variables						
Special education	1.47	(0.88–2.41)	1.42	(0.84–2.48)	1.50	(0.86–2.54)
Dropout risk index	1.17*	(1.03–1.36)	1.17*	(1.03–1.36)	1.18*	(1.04–1.37)

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. ¹Highest level of education of one parent.

or untenable bullying situations. In such contexts, school mobility itself may not be the primary problem that adolescents face but rather highlight underlying instability and limited parental capacity to attend to their teenagers' needs.

In contrast, school mobility can be neutral or positive for adolescents' schooling outcomes when it is planned in advance, well-timed, and voluntarily chosen to improve adolescents' and their family's circumstances (Hanushek et al., 2004; Rumberger, 2015). This might happen, for instance, when an adolescent changes school to enroll in a new program of interest or because of a family move following a promotion or a desire to live in a safer neighborhood.

Strengths and Limitations

This study has several methodological strengths. The two-step sampling procedure (wide screening followed by a careful selection of a subgroup oversampling dropouts and carefully matched peers, both with high participation rates) was designed to identify the factors potentially precipitating dropout in high school. The measurement approach combining self-reports, administrative records, and detailed interviews allowed for credible assessments of the control variables prospectively (during the screening phase prior to dropout), of the outcome variable based on official administrative data, and of school mobility, the independent variable, based on detailed individual interviews in which research assistants

carefully and uniformly gauge timing. The fact that the study was conducted outside of the United States is also a significant strength, given that the extant research on school mobility is overwhelmingly from that country, where mobility is atypically common compared to other Western countries (Gillespie, 2017).

However, the study is also limited. The sample is not representative of the whole adolescent population, as it does not include those attending private or socioeconomically advantaged schools for whom mobility may have different catalysts and consequences, or military families for whom relocation is common as, unlike its American counterparts, this represents a very small proportion of Canadian families (Government of Canada, 2021). Because of power limitations, the two aspects of timing considered (seasonal and developmental timing) were investigated separately and not simultaneously. Future research is thus needed to determine whether combinations are problematic (e.g., mobility in late high school AND during the school year). Other important contextual aspects of mobility were not considered, such as school or family circumstances within which mobility took place. Finally, the associations between different types of mobility and dropout are correlational in nature, precluding any causal interpretations. Even though sociodemographic risk variables commonly associated with dropout and school mobility were statistically controlled, other extraneous confounding variables

not taken into consideration could explain part of the associations between mobility and dropout.

Practical Implications and Future Research

This research highlights the importance of supporting mobile students who transition to a new secondary school during a school year or late in high school, as these students are at risk of interrupting their education before graduating. This remains relevant regardless of whether mobility merely signals underlying needs or plays a causal role in offsetting other challenges. To better support vulnerable mobile students, educators can implement different types of actions, such as ensuring communication between sending and receiving school staff to facilitate transitions (Rumberger, 2015). After mobile students' initial integration, their academic progress and general wellbeing should be monitored to swiftly identify and support those who show signs of academic difficulties or disengagement. School can also work upstream and contribute to reducing involuntary school mobility during sensitive periods due to school closures, school transfers, or disciplinary actions, specifically expulsions, which have been found effective in reducing problematic mobility (Okonofua et al., 2016).

Future research should investigate the contexts within which school mobility takes place to further distinguish between adverse and non-problematic mobility; it is plausible that in many cases, mobility occurs within the context of a positive change, such as upward family mobility, change toward desired programming, or removal from a problematic school environment. In other words, future research should consider not only the timing of school mobility but also the reasons that spurred mobility in the first place.

SUMMARY

Non-promotional mobility in high school may signal or precipitate other social and academic difficulties. Mobility occurring during the school year or later years may be particularly harmful, especially in terms of dropout. School services should take note of student mobility so to intervene where and when

REFERENCES

- Anderson, S., Leventhal, T., Newman, S., and Dupéré, V. (2014). Residential mobility among children: A framework for child and family policy. *Cityscape* 16, 5–36.
- Archambault, I., and Janosz, M. (2009). Fidelity, discriminant and predictive validity of the Dropout Prediction Index. *Can. J. Behav. Sci.* 41, 187–191. doi: 10.1037/a0015261
- Cameron, A. C., and Miller, D. L. (2015). A practitioner's guide to cluster-robust inference. *J. Hum. Resour.* 50, 317–372. doi: 10.3368/jhr.50.2.317
- Chen, H., Cohen, P., and Chen, S. (2010). How big is a big Odds Ratio? Interpreting the magnitudes of odds ratios in epidemiological studies. *Commun. Stat. Simul. Comput.* 39, 860–864. doi: 10.1080/03610911003650383

necessary and future research should investigate contextual mechanisms by which mobility affects student's experiences.

DATA AVAILABILITY STATEMENT

The data analyzed in this study is subject to the following licenses/restrictions: The data set contains confidential data. Requests to access these datasets should be directed to VD, veronique.dupere@umontreal.ca.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Comité d'Éthique de la Recherche en Éducation et en Psychologie (CEREP). Written informed consent from the participants' legal guardian/next of kin was not required to participate in this study in accordance with the National Legislation and the Institutional Requirements.

AUTHOR CONTRIBUTIONS

VD, CF, and EO contributed to the conception of the study and data analyses. JS wrote the first draft of the manuscript. VD, IA, and ED wrote the sections of the manuscript. All authors contributed to the manuscript revision and read and approved the submitted version.

FUNDING

Data collection was supported by several grants received by VD from the Social Sciences and Humanities Research Council of Canada (SSHRC # 430-2013-000015 and 435-2016-0838), the Canada Research Chairs program (# 954-232437), the Fond de recherche du Québec-Santé (FRQSC # 27205 and 28816), the Fond de recherche du Québec-Société et culture (FRQSC # 164645 and 178837), and the Université de Montréal Public Health Research Institute (IRSPUM, Fellowship). Additional funding to research assistants was provided by Groupe de recherche sur les environnements scolaires (GRES).

- Duncan, G. J., Engel, M., Claessens, A., and Dowsett, C. J. (2014). Replication and robustness in developmental research. *Dev. Psychol.* 50, 2417–2425. doi: 10.1037/a0037996
- Dupéré, V., Dion, E., Cantin, S., Archambault, I., and Lacourse, E. (2021). Social contagion and high school dropout: the role of friends, romantic partners, and siblings. *J. Educ. Psychol.* 113, 572–584. doi: 10.1037/edu0000484
- Dupéré, V., Dion, E., Leventhal, T., Archambault, I., Crosnoe, R., and Janosz, M. (2018). High school dropout in proximal context: the triggering role of stressful life events. *Child Dev.* 89, e107–e122. doi: 10.1111/cdev.12792
- Dupéré, V., Leventhal, T., Dion, E., Crosnoe, R., Archambault, I., and Janosz, M. (2015). Stressors and turning points in high school and dropout: A stress process, life course framework. *Rev. Educ. Res.* 85, 591–629. doi: 10.3102/0034654314559845
- Gagnon, V., Dupéré, V., Dion, E., Léveillé, F., St-Pierre, M., Archambault, I., et al. (2015). Screening of secondary school dropouts using administrative

- or self-reported information. *Can. J. Behav. Sci.* 47, 225–241. doi: 10.1037/cbs0000014
- Gasper, J., DeLuca, S., and Estacion, A. (2012). Switching schools: revisiting the relationship between school mobility and high school dropout. *Am. Educ. Res. J.* 49, 487–519. doi: 10.3102/0002831211415250
- Gillespie, B. J. (2017). “Historical and recent trends in American mobility,” in *Household Mobility in America: Patterns, Processes, and Outcomes*, ed. B. J. Gillespie (London: Palgrave Macmillan), 29–47.
- Gottman, J. M., and Levenson, R. W. (2000). The timing of divorce: predicting when a couple will divorce over a 14-year period. *J. Marriage Fam.* 62, 737–745. doi: 10.1111/j.1741-3737.2000.00737.x
- Government of Canada (2021). *March 2020: Canadian Armed Forces 101*. Available online at: <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/transition-materials/defence-101/2020/03/defence-101-caf-101.html#shr-pg0> (accessed on Apr 2, 2021).
- Hanushek, E. A., Kain, J. F., and Rivkin, S. G. (2004). Disruption versus Tiebout improvement: the costs and benefits of switching schools. *J. Public Econ.* 88, 1721–1746. doi: 10.1016/S0047-2727(03)00063-X
- Heckman, J. J., Humphries, J. E., and Kautz, T. (2014). *The Myth of Achievement Tests: The GED and the Role of Character in American Life*. Chicago: University of Chicago Press.
- Herbers, J. E., Reynolds, A. J., and Chen, C.-C. (2013). School mobility and developmental outcomes in young adulthood. *Dev. Psychopathol.* 25, 501–515. doi: 10.1017/S0954579412001204
- Okonofua, J. A., Paunesku, D., and Walton, G. M. (2016). Brief intervention to encourage empathic discipline cuts suspension rates in half among adolescents. *Proc. Natl. Acad. Sci. U.S.A.* 113, 5221–5226. doi: 10.1073/pnas.1523698113
- Rumberger, R. W. (2011). *Dropping out: Why students Drop out of High School and What Can be Done About it*. Cambridge: Harvard University Press.
- Rumberger, R. W. (2015). *Student Mobility: Causes, Consequences, and Solutions*. Boulder: National Education Policy Center.
- Swanson, C. B., and Schneider, B. (1999). Students on the move: residential and educational mobility in America’s schools. *Soc. Educ.* 72, 54–67. doi: 10.2307/2673186
- Welsh, R. O. (2017). School hopscotch: A comprehensive review of K–12 student mobility in the United States. *Rev. Educ. Res.* 87, 475–511. doi: 10.3102/0034654316672068
- 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:** All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.
- Copyright © 2022 Stamp, Frigon, Dupéré, Dion, Olivier and Archambault. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.