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Abstract

Despite extensive research on vulnerable children and youths in school (commonly known as students at-risk) little has been done to uncover the stressors, wellbeing, interests, and school engagement of these students within the primary school level (aged 7 to 12). This study examined different domains across these constructs to develop a profile of at-risk primary school students. A total of 343 at-risk and non-at-risk students aged 10 to 12 years old were recruited from a Singapore primary school to complete online survey questionnaires. Quantitative results showed lower levels of emotional wellbeing and physical health, as well as higher levels of frustration in several constructs of psychological needs and school engagement in the at-risk group. Interestingly, these students reported better social wellbeing, especially in teacher relationships. These findings can be triangulated alongside responses in the structured interviews to create a profile that can guide the design and development of suitable at-risk programs to help the struggling at-risk students.

Introduction

Education is widely considered to be an important phase of life in many countries around the world, especially during childhood. Through education, children have the opportunity to acquire different knowledge, skills, and capacities (i.e., intellectual, socio-emotional, physical etc.) that support their development towards becoming functional individuals who can contribute meaningfully to society (Hahn & Truman, 2015; Macur, 2020). Although the current global literacy rate is estimated to be at 86% (UNESCO Institute for Statistics, 2020), children may have vastly different education experiences as a result of (but not limited to) factors such as culture, economic statuses, religion, race, and gender (Macur, 2020). Given its significance, many researchers have rigorously studied the extent to which these differences affect students and their educational experiences.

Students who come from low-socioeconomic backgrounds, minority groups, or face lack of parental involvement in the educational process are suggested to be heavily disadvantaged in their educational experiences and face higher risks of school dropouts and academic failure (Kaufman et al., 1992). Generally, these students can be defined as at-risk, and often experience family and interpersonal issues which negatively affect their academic performances (Fortin et al., 2006). Furthermore, it has also been found that at-risk children from low-socioeconomic backgrounds were more likely to undergo slower cognitive and behavioural development, causing them to experience negative outcomes such as developing maladaptive behaviours and poor academic achievement (Pungello et al., 2010).

Research objectives

The Compulsory Education Act (CEA), introduced in 2003, required all Singaporean children to attend a compulsory six-year primary education, which is indicative of the government's views on the importance of education (Rzayeva, 2021). Although 97.5% of Singaporeans aged 15 years and above were found to be literate (UNESCO Institute for Statistics, 2022), the Ministry of Education (MOE) has also acknowledged the presence of 'vulnerable' or students with 'high needs'. To address this, MOE (2020) has strived to provide additional support to schools with significantly higher populations of these students to 'strengthen the safety net and address barriers to school attendance and learning for these at-risk students. However, more work needs to be done to ensure that these supporting resources are utilized effectively. Although most of these students can be generally defined as academically at-risk, it should be understood that they all possess different profiles alongside varying stressors, interests, needs, and states of wellbeing (Ainley at al., 2002). In order to design a sustainable and effective school-based program, it is important to ensure to consider these different profiles that at-risk students possess (Davies & Peltz, 2012). Furthermore, research on at-risk students have generally focused on comparisons between socioeconomic backgrounds and its impacts on academic performances, with little being done to explore the differences in stressors, wellbeing, interests, and school engagement of these students. Thus, this paper will discuss the findings from the quantitative phase of the study, where online survey questionnaires were used to measure multiple constructs of the aforementioned domains.

Research methodology

Participants

A total of 343 students, aged between 10 to 12 years old (i.e., primary four, five, and six), were recruited from a Singapore primary school to participate in the study to measure

different constructs of wellbeing, life stressors, interests, and student engagement. Of these, 35 students (23 males and 12 females) were identified as at-risk, and 308 students (156 males and 152 females) were identified as non-at-risk. Informed consent and assent were obtained from the students and their parents/guardians to participate in the study. Permission was also granted by the primary school's principal to conduct data collection. Ethics approval for the study was granted by the Institutional Review Board of Nanyang Technological University.

Design

Online questionnaires were used to enquire the students' states of wellbeing, interests, school engagement, and life stressors after their end-of-year examinations in November. A 6-point agreement/disagreement Likert scale (i.e., strongly disagree to strongly agree) was used to measure constructs/domains of student engagement (affective-behavioural-cognitive engagement/disengagement, school engagement/disengagement), basic psychological needs, self-wellbeing, academic wellbeing, psychological wellbeing (specifically optimism), interests (i.e., passion), social wellbeing (i.e., relationships), and elementary school success (i.e., peer acceptance and physical health). For the remaining domains, 6-point frequency scales (i.e., never to everyday; at no time to all the time, etc.) were used to measure broad domains of emotional, psychological, and social wellbeing, mental wellbeing, and elementary school success (specifically feelings). For students' interests and stress, open-ended, qualitative items were provided within the online questionnaire for students to select their top three interests and life stressors from different categories and rate them based on their level of perceived interest or experienced stress.

Materials and procedures

In order to create a comprehensive profile of at-risk students, the items in the online questionnaires were adapted from existing research instruments that had undergone reliability and validity testing. Before the survey was administered for the students, early access was given to selected primary 4, 5, and 6 teachers to obtain feedback on the suitability and difficulty of the survey items. Due to the large number of items, the survey was split into two parts to avoid test fatigue. The students completed both surveys within the same week, during curriculum time and facilitated by the teachers in the school. The teachers have been briefed on the survey, to enable them to clarify any queries by the students. To ensure confidentiality and anonymity, students were given a participant ID to complete both survey questionnaires. Prior to the quantitative phase, all students completed a demographic questionnaire, which allowed researchers to identify and categorize participants based on whether they were at-risk or non-at-risk. These categories were further screened by the teachers based on a set of criteria such

as attendance rate, behavioural issues, and family background. To uncover students' interest activities and life stressors, three categories for both domains, each containing a list of different interest activities (i.e., physical, leisure, screentime) or stressors (i.e., academic activities, relationships, general matters), were provided for students to select a top interest category and their top three interests which they rated on a scale from 0 (lowest) to 10 (highest). Results from both online survey questionnaires were downloaded and compiled based on the students' participant IDs before being analysed using IBM SPSS Statistics (Version 26).

Findings and discussion

Results

Before proceeding with data analysis, negatively worded items first underwent reverse scoring. Subsequently, descriptive analyses were conducted to obtain the mean scores for each construct within each domain. Between-group analyses were conducted to compare the different constructs of wellbeing, school engagement, and interests between at-risk and non-at-risk groups.

Between-group analyses

Well-being, school engagement, and interests

In order to obtain deeper understandings into micro-level differences between at-risk and non-at-risk students, the constructs within each domain of wellbeing, school engagement, and interests were individually analysed. Findings from the between-group analyses revealed statistically significant differences between both groups on emotional wellbeing, social wellbeing for teacher support, experienced frustration (autonomy, relatedness, competence) for basic psychological needs, disengagement (affective, behavioural, cognitive) for students' school engagement, and students' school physical health for school success profile.

To measure emotional wellbeing, students were asked on how often they felt happy, interested, and satisfied with their lives. At-risk students reported only experiencing positive emotional wellbeing about once or twice a month, or about once a week (M = 2.698) compared to non-at-risk students, who reported a slightly greater frequency of once a week (M = 3.201). For basic psychological needs, significant differences were found between both at-risk and non-at-risk groups on their experienced frustrations. In general, at-risk students somewhat agreed that they experienced lesser autonomy (M = 4.531), relatedness (M = 4.086), and competency (M = 4.211) in fulfilling their basic psychological needs compared to non-at-risk students who somewhat disagreed that

they experienced frustrations in autonomy (M = 3.834), relatedness (M = 2.939), and competency (M = 3.763). With regards to school engagement, at-risk students (affective [M = 3.678], behavioural [M = 3.233], cognitive [M = 4]) generally somewhat agreed that they were more likely to participate in activities that show disengagement in school than non-at-risk students (affective [M = 3.172], behavioural [M = 2.759], cognitive [M = 3.386].

This finding was the same for reported school physical health, where both groups of students reported similar scores. School physical health is also a negatively worded construct, with higher scores reflecting poorer physical health. At-risk students (M = 3.667) were inclined towards somewhat agreeing that they experienced poorer physical school health, whereas non-at-risk students (M = 3.071) generally somewhat disagreed with the statement. Surprisingly, higher scores were found for at-risk students (M = 5.073) on their reported social wellbeing, with students agreeing that they felt close to, and cared for and supported by their teachers. This response was slightly lower for non-at-risk students (M = 4.462), who only somewhat agreed with the same item.

Given that at-risk students reported greater frustration, school disengagement, and poorer school physical health, a correlation analysis was performed to understand if these factors were associated with one another. Results of this analysis found statistically significant positive associations between 1) relatedness frustration and behavioural disengagement, 2) competence frustration and behavioural disengagement, as well as 3) cognitive disengagement with school physical health. These findings suggest that when students (both at-risk and non-at-risk) experienced frustrations in their social connectivity and self-confidence, they were more likely to display disengagement behaviours in school. As students experienced increased cognitive disengagement, they were also more likely to experience poorer school physical health.

Top interest activities

At-risk students selected physical activity as the category for all top three interest activities. Cycling (N = 10) was the top selected interest activity, followed by listening to music (N = 8), and playing video games (N = 7). On the other hand, non-at-risk students indicated screentime and leisurely activity when selecting top three interests activities, with screentime being selected twice. For non-at-risk students, playing video games (N = 118), listening to music (N = 90), and cycling (N = 41) was selected as their top three interest activities.

For the most selected interest category, physical activity (N = 11) was again the top choice for at-risk students, with cycling (N = 5) also chosen as the most interested activity. This was followed by playing video games (N = 5) and drawing/sketching (N = 3), interests which belonged to the screentime and leisurely activity categories. Unsurprisingly, screentime (N = 147) was the most selected interest category for non-

at-risk students. Although the top two interested activities remained as video games (N = 79) and listening to music (N = 24), the third most interested activity was spending time on social media (N = 14), instead of cycling.

Although the findings are strongly indicative of at-risk students' preferences for physical activities and non-at-risk students' preferences for screentime, it is important to consider the percentage of students within both groups who own mobile/electronic device. As non-at-risk students were more likely to come from families with higher socioeconomic statuses (Destin et al., 2019), there might be greater likelihood for them to own electronic devices compared to at-risk students. That being said, studies have found mobile/electronic device usage frequency in children to be independent of their family's socioeconomic statuses (Hosokawa & Katsura, 2018; Rashid et al., 2021).

Top life stressors

Academic stress was the most commonly selected stress category for all three top stresses for both groups. At-risk students ranked receiving low grades (N = 11) as their top life stressor, while waiting for exam results (N = 10) and feeling left out (N = 8) was the second and third top stressors. For non-at-risk students, waiting for exam results (N = 90), thoughts about the future (N = 74), and preparing for exams (N = 68) were the top three life stressors selected. Interestingly, one of the top life stressors for at-risk students centred on feeling left out, which belonged within the relationship stress category, while non-at-risk students felt that thinking about their futures, which belonged to general stress, was the second most significant life stressor. However, as students were only able to select and rate their top three life stressors, it is difficult to suggest if these differences were caused by different perspectives between at-risk and non-at-risk students towards relationships and preparedness for the future.

Conclusion

This study explored the wellbeing, school engagement, interests, and life stressors of primary school students in Singapore to develop a profile of at-risk children. In the first phase of the study, two online survey questionnaires were administered to uncover different constructs within these domains. Between-group analyses revealed statistically significant differences between at-risk and non-at-risk students, with the former reporting lower levels of emotional wellbeing and school physical health, while experiencing higher frustration in fulfilling their basic psychological needs, as well as greater levels of affective-behavioural-cognitive and participatory disengagement in school. Given these quantitative findings, it may be possible to triangulate them with the second phase of the study, which consists of structured interviews with several at-risk students and teachers

who have engaged with these students in an after-school program, to gain deeper insights into the perceptions of at-risk characteristics, behaviours, and traits. With these, a comprehensive profile may be developed to well-targeted programs that can address the general needs and weaknesses of struggling at-risk students.

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