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Student Emotional Well-being, School Climate and Classroom Anxiety

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Abstract

Mental health and well-being are the fundamental human rights and preconditions for achieving the UN Sustainable Development Goals (Dybdahl & Lien, 2017; World Health Organization, 2022). Since research shows an increasing incidence of mental health disorders among adolescents and a lack of studies related to mental health in low- and middle-income countries, this study focused on exploring student well-being in a small state with a relatively short tradition of studying mental health issues. The main objective of the current study was to explore the relationships of school-related factors (school climate and classroom anxiety) with emotional well-being to provide evidence that can contribute to the mitigation of mental health issues among Year 7 to Year 11 students in Malta. This cross-sectional study collected data about Year 7 to Year 11 students' well-being, their perception of school climate and their experience of classroom anxiety by applying validated instruments with good metric characteristics. Due to the limited number of participants in addition to exploratory and multivariate analysis, this study also used additional non-parametric statistical techniques. The study found significant associations between student emotional well-being and classroom anxiety but the various dimensions of school climate were the strongest predictors of students' self-reported mental well-being. Since the findings of this study indicate that school-related

stress significantly contributes to the deterioration of students' emotional well-being, the discussion focused on some measures that can improve students' experience of schooling and improve their mental health.

Keywords: *student well-being, school-related stress, academic emotions, middle school, secondary school*

1. Introduction

An increased vulnerability to mental health challenges like depression and anxiety characterises the adolescent stage of human development (Hoås Morin, 2022). Research shows that girls are roughly twice as likely to experience depression and anxiety symptoms as boys (Bakken, 2020, Wertz et al., 2015). Depression and anxiety disorders are also two of Europe's top five causes of the overall disease burden for children and adolescents (World Health Organisation [WHO], 2020), and depression is one of the leading causes of suicide among adolescents (Schulte-Körne, 2016). Young people with serious mental illnesses are particularly vulnerable to social exclusion that prevents them from accessing the social, economic and cultural capital necessary for a safe and healthy life (European Commission, 2021). Baumeister and Leary (1995) found that schools that support the development of positive, caring, and stable relationships contribute to students' sense of belonging and positive emotions.

1.1. Emotional Well-being

Research demonstrates that school climate can impinge on student mental health and that early interventions can moderate the severity of classroom anxiety and its effect on student mental health. However, additional studies are warranted to understand better the impact of the multiple factors at play. According to the European Commission's (2021) child mental health report, extended interventions are more likely to be effective than generic and time-limited interventions. School climate influences all aspects of student life, including performance in school, relations with other students, and their well-being (Daily et al., 2019; Uline & Tschannen-Moran, 2008). A healthy school climate is more likely to develop a sense of connectedness to the school, respect for others and trust in the system (Catalano et al., 2004; Foster et al., 2017). Literature also shows that good school climates facilitate students'

academic and social development (Wang & Degol, 2016; Darling-Hammond & Cook-Harvey, 2018).

1.2. Classroom Anxiety

Research shows that anxiety is one of the most prevalent mental disorders (Thibaut, 2017), affecting approximately one-third of the population (Bandelow & Michaelis, 2015). For example, the Europe 2020 State of Health in the EU study found that approximately one-third of girls and a slightly smaller proportion of boys attending middle schools reported irritability and some psychosomatic problems or sleep disorders (Organisation for Economic Cooperation and Development /European Union, 2020). Anxiety disorders are also common among secondary school students (e.g., Essau et al., 2000; Merikangas et al., 2010), and the first symptoms of anxiety start developing from the beginning of formal education (Liu et al., 2011).

Anxiety, as “apprehensive anticipation of future danger or misfortune accompanied by a feeling of worry, distress, and/or somatic symptoms” (American Psychiatric Association 2013, p. 818), also negatively influences students’ functioning in daily life and overall well-being. In contrast, while state anxiety is a temporary condition and often has a beneficial “motivational function” (Hardy & Hutchinson 2007, p. 160), students with high trait anxiety experience permanent generalised anxiety (Öhman, 2008) that jeopardises their emotional well-being. In addition, high anxiety levels negatively influence student performance and social life (Mazzone et al., 2007). Anxiety disorders during adolescence are associated with several issues, including loneliness, school avoidance, school connectedness (Weeks et al., 2009), depression (Cummings et al., 2014) and addictions in adulthood (Woodward & Fergusson, 2001). Due to such serious consequences, educational institutions must prevent factors that negatively affect student well-being.

1.3. School Climate

School climate is vital for students’ emotional well-being since it determines the pedagogical and social aspects of school life (Loukas & Robinson 2004). Students’ favourable perception of school climate is linked with positive attitudes toward school regulation and support from teachers (Simons-Morton & Crump, 2003; Goodenow, 1993). Such a school climate contributes to student social-emotional well-being by strengthening student connectedness to the school and academic achievement (Cefai et al., 2013).

Systematic literature reviews demonstrate a growing incidence of youth mental health issues (Aldridge & McChesney, 2018; Colvin et al., 2019). Recent policy documents (European Commission [EC]/European Education and Culture Executive Agency [EACEA]/Eurydice, 2020) emphasise that poor school climate contributes to social inequality. The National School Climate Council (2007) also claims that a “positive school climate fosters youth development and learning necessary for a productive, contributive, and satisfying life in a democratic society” (p. 4). Research evidence also demonstrates a strong association between students’ favourable perception of school climate and well-being. (Hatzichristou et al., 2018; Kutsyuruba et al., 2015).

The literature also shows that a complex interplay of contextual factors ranging from micro (schools and family) to macrosystems (culture and government) influences students’ schooling (Garbarino, 2014; Inchley et al., 2020). This literature indicates that educational and social institutions should create optimal conditions for the healthy development of children and youth (Bronfenbrenner, 1979; Zubrick & Kovess-Masfety, 2005).

1.4. Gender, School Climate, Classroom Anxiety and Emotional Well-being

A large body of evidence demonstrates that female secondary school students report anxiety symptoms more often than their male counterparts (Attri, 2013; Hosseini & Khazali, 2013; Bahrami & Yousefi, 2011; OECD, 2017). Reviewed literature also shows that the development of anxiety in boys and girls starts at a similar time (Merikangas et al., 2001). However, female students have higher overall school-related test anxiety levels than males (Birmaher et al., 1997; Cassady & Johnson, 2002; Freudenthaler et al., 2008; Kareemi, 2016; Leonard et al., 2015; Lowe & Ang, 2012). This difference is explained (Cassady & Johnson, 2002) by females’ stronger tendency to express their emotions than their male counterparts. Still, others explain this difference through the degree to which girls and boys are ready to admit their test anxiety (Bodas & Ollendick, 2005). Gender is not associated with the probability of any disorder, but girls are more likely to report internalising disorders, while boys are more likely to report externalising problems (Rescorla et al., 2007).

1.5. Age/Grade, School Climate, Classroom Anxiety and Emotional Well-being

Waasdorp et al. (2020) reported that middle school students perceived school climate (connectedness, environment, and school safety) more positively than their older peers. This effect was strongest for emotional engagement (measured by school connectedness) compared to increased cognitive and behavioural engagement.

According to the literature, mental health issues emerge when adolescents attend secondary school, and early interventions based on reliable diagnostics of anxiety can mitigate this highly prevalent issue (Polanczyk et al., 2015; Werner-Seidler et al., 2017). For example, the rates of new onset of depression increased from 1% to 2% at age 13 and from 3% to 7% at age 15 (Lewinsohn et al., 2000). Likewise, anxiety disorders in adolescence have a median prevalence rate of 8%, with a vast range of estimates ranging from 2% to 24% (Costello et al., 2005).

Several studies claim (e.g. Muris et al., 2002; Gullone, 2000; Ohannessian et al., 2017) that most anxiety disorder symptoms decline as students mature, but in contrast, some studies (e.g. Su et al., 2008; Twenge, 2000) reported a significant increase in general anxiety as students develop. Such inconsistent and contradictory results require additional research, and this study attempts to contribute to this research domain.

2. Purpose

The current study examined the student experience of classroom anxiety and levels of school climate and how these contributed to emotional well-being. This study focussed only on Maltese state school participants at the middle and secondary levels. The study examined the following research questions:

- Are there differences between males and females in their perception of school climate, classroom anxiety and emotional well-being?
- Are there differences between students in different grades regarding their perception of school climate, classroom anxiety and emotional well-being?
- Are there any significant relationships between school climate, classroom anxiety and emotional well-being?

3. Method

This cross-sectional study explored the student experience of classroom anxiety and the relationship of school climate with students' emotional well-being. To achieve this, middle and secondary school students were selected for this study and asked to self-report on a comprehensive set of school climate measures. The selected instrument, the Georgia School

Climate Survey, is a viable tool for middle and secondary school students to reliably measure student perception of the school environment (Brand et al., 2008; La Salle et al., 2016).

3.1 Participants

The participants in this study were Year 7 to Year 11 students in Maltese middle and secondary public schools. In addition to the five school climate factors, this study collected data about the participants' grades, gender, and nationality. The sample of participants included 298 students from Malta. Fifty-two respondents were in Year 7, 111 were in Year 8, 55 were in Year 9, 45 were in Year 10, and 34 were in Year 11. The sample comprised 186 females and 107 males, with four students not declaring their gender. Most students (282) were born in Malta, and the remaining students were mainly from other non-English speaking countries. The margin of error was 5.6%, with a 95% confidence level based on the estimated number of middle and secondary school students in Malta (NSO, 2020).

This study was part of a broader international study organised by members of the International School Climate Collaborative (ISCC) and approved by the local faculty research ethics committee and educational authorities. Due to the restricted number of schools, the study applied a convenience sampling strategy (Connelly, 2008). The information letter and parent opt-in forms were distributed together with assent forms for students and a paper-and-pencil survey

3.2. Instruments

3.2.1. Georgia School Climate Survey

The Georgia School Climate Survey (GSCS) is a reliable, well-established, and validated instrument for diagnosing various dimensions of school climate as perceived by middle and secondary school students. The instrument consists of eight sub-scales, including school connectedness, character, physical environment, adult and peer support, cultural acceptance, order and discipline, and perceived school safety (La Salle, 2017). The GSCS consists of 36 four-point Likert scale items. Students' perceptions were coded from 1 (strongly disagree) to 4 (strongly agree), and higher scores indicated more favourable perceptions of school climate. The reliability (Cronbach's alpha) of the entire scale for middle and secondary school students was established at a level of .92 (La Salle, 2017).

The original form of GSCS was back-translated and, to some extent, adjusted to the local terminology related to the classification of student ethnic origin. The package included an information letter and consent form for parents and an information letter and assent form for

students, together with the paper-and-pencil form of the survey for parents and students. This was distributed in an envelope to the potential participants. The participants were instructed to return their completed surveys sealed in the provided envelopes. The survey was anonymous, and students who received their parents' consent and assented to participate volunteered their answers.

3.2.2. Classroom Anxiety Scale

This study also used the Classroom Anxiety Scale (Sotardi, 2018), a recently developed paper-and-pencil instrument with good metric characteristics. Cronbach's alpha coefficient for the Classroom Anxiety Scale was reported to range from .76 to .84. (Sotardi, 2018). Alpha coefficients for the four constituent classroom anxiety subscales (test/exam anxiety; writing anxiety; public speaking anxiety; group work anxiety subscales) are also good. These range from .80 for group work-related anxiety to .89 for public speaking-related anxiety (Raykov & Martinelli, 2019). The scale contains 12 items on a 7-point Likert scale that explore the four listed domains. Higher scores are associated with higher levels of perceived classroom anxiety.

3.2.3. Well-being Indicator

The well-being indicator was taken from the Mental Health Scale, a component of the Georgia Student Health Survey (Georgia Department of Education, n.d.). It includes an item that assesses students' well-being within 30 days prior to the survey date (In the past 30 days, on how many days have you felt sad or withdrawn). Students' responses were in the range from 1 = 'not at all' to 7 = 'all 30 days'. High scores were indicative of poor well-being.

3.3. Data Analysis

Data analysis was conducted with IBM SPSS Statistics (Version 26). In addition to the basic exploratory analysis, differences regarding students' gender and grades were based on non-parametric tests. The Shapiro–Wilk test indicated significant deviation from normality for all item scores since p-values exceeded the 0.05 level of significance and, in this study, were calculated rank correlations. The internal consistency of the scales used in this study was calculated by Cronbach's α coefficient of internal consistency and the alternative McDonald's Omega coefficient ω .

4. Results and Discussion

The Georgia School Climate Survey sample mean was 107.63 (SD = 13.87). The minimum score was 59, and the highest score was 131. The School Climate Survey possessed high internal reliability (Cronbach's $\alpha = .893$; McDonald's $\omega = .899$). The Maltese Georgia School Climate Survey scores were similar to those of the international cohort (LaSalle et al., 2021). The Classroom Anxiety Scale mean was 44.66 (SD = 15.39); the minimum score was 12, and the highest score was 84. The Classroom Anxiety Scale possessed high internal reliability (Cronbach's $\alpha = .870$; McDonald's $\omega = .871$).

4.1. School Climate and Gender

The male participants were compared with the female participants on all the subscales and the total school climate score. Significant gender differences were evident in the case of the Character (Pro-Social Orientation) subscale, Order and Discipline subscale and Safety subscale, with girls consistently scoring higher than boys. A Mann-Whitney U test confirmed that the score for the Character (Pro-Social orientation) subscale was statistically significantly higher for females (Mdn = 4) than for males (Mdn = 3.67, $U = 7053$, $p = .001$). A second Mann-Whitney U test also confirmed that the score for Order and Discipline subscale was significantly higher for females (Mdn = 2.8) than for males (Mdn = 2.6, $U = 8014.5$, $p = .029$). A third Mann-Whitney U test confirmed that the score for the Safety subscale was higher for females (Mdn = 3.128) than for males (Mdn = 2.75, $U = 7411$, $p = .003$).

A significant gender difference was also found on two subscales of the Classroom Anxiety Scale. A Mann-Whitney U test confirmed that the Test/Exam Anxiety subscale score was statistically significantly higher for females (Mdn = 17) than for males (Mdn = 15, $U = 6694.5$, $p = .002$). The Mann-Whitney U test also indicated that the Public Speaking Anxiety subscale score was higher for females (Mdn = 17) than for their male counterparts (Mdn = 13, $U = 6919$, $p = .005$). There was no significant gender difference for the one question on mental well-being.

Results are consistent with the findings from other studies of anxiety that female students experience higher levels of all types of anxiety (Birmaher et al., 1997; Cassady & Johnson, 2002; Freudenthaler et al., 2008; Kareemi, 2016; Leonard et al., 2015; Steinhausen et al., 2008).

4.2. Comparison between Middle and Secondary School Students

A significant effect for school level was found on two subscales of the School Climate Questionnaire, a subscale of the Classroom Anxiety Scale and the mental well-being item. A Mann-Whitney U test indicated that the score for the School Connectedness subscale was higher for middle school respondents (Mdn = 13) than for secondary school respondents (Mdn = 12, $U = 8620$, $p = .008$). A second Mann-Whitney U test confirmed that the Adult Social Support subscale score was higher for middle school respondents (Mdn = 13) than for secondary school respondents (Mdn = 12, $U = 7826.5$, $p = .001$). A third Mann-Whitney U test also confirmed that the Test/Exam Anxiety subscale score of the Classroom Anxiety Scale was lower for middle school respondents (Mdn = 16) than secondary school respondents (Mdn = 17, $U = 7262$, $p = .003$). Regarding the mental well-being item, middle school students exhibited lower levels of emotional distress than secondary-level students. A Mann-Whitney U test for the item “In the past 30 days, on how many days have you felt sad or withdrawn” indicated that the score was lower for middle school respondents (Mdn = 2) than secondary school respondents (Mdn = 3, $U = 6796$, $p = .001$).

4.3. Student Well-being, School Climate and Classroom Anxiety

Since the assumptions of parametric statistical analysis were not all met by the raw data, each variable was transformed using a Log10, Inverse or Square Root transformation to normalise the original data. This improved the issues of normality and equal variance.

In model 1, all independent variables were regressed onto the one dependent variable in a simple regression (see Table 1). As expected, most independent variables (Classroom Climate and Classroom Anxiety subscales) loaded significantly onto the dependent variable (the emotional well-being item). This indicated that the relative beta weights of the School Climate questionnaire and Classroom Anxiety Scale predicted students’ emotional well-being. This relationship is evident in model 1 below, with all items entered into a simple regression; only one independent variable is regressed onto the dependent variable in any one regression.

Models 2 and 3 explain the multiple regression models employed to explore the contribution of the items in each of the two instruments separately. Due to shared variance, the predictive power of some of the components of each instrument (the Adult Support, Peer Social Support, Cultural Acceptance, Order and Discipline and Safety subscales of the School Climate Questionnaire and the Writing Anxiety and Group Work Anxiety subscales of the Classroom Anxiety Scale) lost their predictive power.

Model 4 regressed all independent variables onto the dependent variable. School Connectedness, Character (pro-social orientation), and Physical Environment subscales of the School Climate Questionnaire and the Test/Exam Anxiety subscale of the Classroom Anxiety Scale were significantly associated with the emotional well-being of secondary school students.

Table 1. Regression Coefficients of School Climate and Classroom Anxiety Measures on Self-reported Emotional Well-being (Standardised Beta coefficients)

Variable	Model 1 (single regression)	Model 2 (multiple regression)	Model 3 (multiple regression)	Model 4 (multiple regression)
School Climate				
1 - School Connectedness	.293***	.153*		0.154*
2 - Character (pro-social orientation)	-.063ns	.206**		0.182**
3 - Physical Environment	.325***	.171*		0.178*
4 - Adult Support	.308***	.145ns		0.067ns
5 - Peer Social Support	.232***	.132ns		0.142ns
6 - Cultural Acceptance	-0.268***	-.046ns		-0.066ns
7 - Order and Discipline	.247***	0ns		0.008ns
8 - Safety	.094ns	.024ns		-0.003ns
Classroom Anxiety Scale				
Test/Exam Anxiety	-.300***		-0.288***	-0.215**
Writing Anxiety	-.196***		-0.057ns	-0.027ns
Public Speaking Anxiety	-.092ns		0.076ns	0.066ns
Group Work Anxiety	.144*		0.089ns	-0.02ns

5. Discussion

In this study, female students generally showed a more favourable perception of the various aspects of school climate than male students. They indicated that Character (Pro-Social orientation) was somewhat more important for them than for male students. Likewise, they rated Order and Discipline, and Safety higher than their male peers. These findings suggest that female students value fairness, honesty, courtesy, achievement, good behaviour, adult supervision and overall safety issues more favourably than boys. Due to developmental

maturity, girls appear to attribute importance to a school climate fostering productivity and satisfaction with one's role in society (National School Climate Council, 2007).

The fact that female students in this study expressed more Test/Exam Anxiety and Public Speaking Anxiety than their male counterparts was in line with several findings in this area and was not unexpected (Birmaher et al., 1997; Cassady & Johnson, 2002; Freudenthaler et al., 2008; Kareemi, 2016; Leonard et al., 2015; Steinhausen et al., 2008). However, no significant gender difference was found in mental well-being. This was surprising as female students in this study did not appear to report internalising disorders more than boys (Rescorla et al., 2007).

The fact that younger students in the first two years of secondary schooling rated school climate higher in three of its subscales is informative. This finding supports other findings by Waasdorp et al. (2020), who reported that middle school students (ages 11 to 12) felt more connected to their school and valued adult social support more than older students (ages 13 to 15). The fact that these students expressed lower test or exam anxiety on the Classroom Anxiety Scale and felt less emotionally distressed than did secondary-level students is likely related to the nature of the middle school setup. Middle school is less formal than exam-driven secondary school, where students can start sitting for public examinations in the vocational areas in the first year of the three secondary years. This finding differs from the results of Muris et al. (2002), who suggested that the intensity of anxiety decreases with students' age. However, the results are similar to the Su et al. (2008) study, which reported a highly significant increase in general anxiety as students matured. Based on the result of this study, it seems that in the Maltese context, students' emotional well-being was affected by their experience of their school connectedness, the school's character (pro-social orientation), the school's physical environment, and their levels of test/exam anxiety.

This study is limited in several ways. First, older students in years 10 and 11 were underrepresented. Secondly, many more students decided not to participate at this age level than agreed to participate, limiting the conclusions about the impact of student ages on the perception of school climate and classroom anxiety. Thirdly, this study was conducted across two schools. Further studies will expand the student database by including more schools to enable a fuller examination of the data in more depth.

6. Conclusions

Overall, this study shows that students' levels of emotional well-being change over the years they spend at school, with a general increase in anxiety as they mature. Younger students rate their school climate more highly than older students indicating a need to organise activities that facilitate the development of positive interpersonal relations. Teachers in the middle and secondary school sectors may need to consider that the school climate significantly impacts students' well-being. Any improvement in the areas assessed, such as connectedness, the social orientation of the school and the feeling of safety it engenders, may lead to better emotional well-being. Limiting the number of tests and examinations, avoiding surprise quizzes and providing homework guidance can also reduce classroom anxiety and, in this way, improve the emotional well-being of students.

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