

# Quality of Life and Well-Being of Adolescents in Portuguese Schools

Fábio Botelho Guedes<sup>1,2,3</sup> • Ana Cerqueira<sup>1,2</sup> • Susana Gaspar<sup>1,4</sup> • Tania Gaspar<sup>1,5</sup> • Carmen Moreno<sup>6</sup> • Margarida Gaspar de Matos<sup>1,7,8</sup>

## Abstract

The quality of the school environment is associated with greater school involvement and academic success and improved levels of well-being/quality of life. In this sense, this study intends to explore the relationship between the quality of life of Portuguese adolescents and school. 8215 adolescents participated in this study, 52.7% of which were female, aged between 10 and 22 years and an average age of 14.36 years ( $SD = 2.28$ ). The sample was collected as part of the Health Behavior in School-aged Children (HBSC) study. The results show that girls like school, teachers, school breaks (between classes) and classes more than boys and present less concerns/difficulties with school. Compared to boys, they report more pressure with the schoolwork and a better perception of safety at school. On the other hand, boys have a better relationship with their peers and teachers, miss more classes on purpose and report a higher perception of quality of life. An above-average QoL is statistically and significantly related with liking school, peers, teachers, school breaks (between classes) and classes. It is also related with feeling less pressure with the schoolwork, a better perception of school success and of safety in the school environment. Additionally, having an above-average QoL is statistically significantly associated with having a better relationship with peers and teachers and less concerns/difficulties with school. This is an important message for the reorganization of schools in terms of their practices and curricula. The need to develop strategies to promote greater identification of students with school is reinforced.

**Keywords** Adolescents • School • School environment • Quality of life

## 1 Introduction

The well-being and quality of life of children and adolescents have received increasing attention from schools and public policies (Anderson & Graham, 2016; Lee & Yoo, 2015). Adolescents' quality of life should be seen as the perception they have about the various aspects of their lives, including the family, the school environment and the relationships with peers (Nunes et al., 2016).

Students spend most of their time at school which makes it a fundamental context to their well-being (Kiuru et al., 2020; Kutsar & Kasearu, 2017; Lee & Yoo, 2015; Powell et al., 2018; Zhang et al., 2016). This is also a privileged context for learning different skills and not just for acquiring academic knowledge. Therefore, school promotes social relationships and psychosocial development which influences the adolescents' well-being (Bücker et al., 2018; Liu et al., 2016; Rönkä et al., 2017).

The quality of the school environment is associated with the students' school involvement, academic success and well-being (Aldridge et al., 2016; Aldridge & McChesney, 2018; Côté-Lussier & Fitzpatrick, 2016; Daily et al., 2019; Gaspar et al., 2020; Kutsyuruba et al., 2015; Lester & Cross, 2015; Lombardi et al., 2019; Singla et al., 2021; Varela et al., 2019). The experiences that students have in the classroom are very important in terms of their development. Thus, a more supportive school environment tends to be reflected in a greater emotional well-being (Oberle, 2018). On the other hand, a less supportive environment has negative repercussions for the students' development (Oberle, 2018; Varela et al., 2019).

Evidence points to the relationship between the connection that adolescents feel with school and their level of well-being (Kiefer et al., 2015; Lester & Cross, 2015; Patalay & Fitzsimons, 2016; Wang et al., 2015). Students who show greater academic success also feel more satisfied with school. In the same sense, students who feel more integrated into the school context are more likely to achieve better academic results and to have a higher level of motivation (Gaspar et al., 2020; OECD, 2017).

The relationship between students and teachers and the relationship between peers are likely to influence the students' development and academic involvement, which is reflected in their psychosocial well-being (Kiefer et al., 2015; Kiuru et al., 2020; Lee & Yoo, 2015; Lester & Cross, 2015; OECD, 2017). The student-teacher relationship is associated with a variety of indicators of students' involvement and academic results, including the rates of school attendance and dropout (Quin, 2017). Therefore, the relationships that are established in the school context are a fundamental factor for the students' well-being (Allen et al., 2018; Fatou & Kubisszewski, 2018; Kutsyuruba et al., 2015; Liu et al., 2016; McGrath & Bergen, 2015; Singla et al., 2021).

Academic pressure and stress are equally important factors for the well-being and QoL of adolescents, tending to be negatively associated with several mental health issues (Jayanthi et al., 2015). On the other hand, insecurity in the school context affects the students' performance, academic results and well-being (Côté-Lussier & Fitzpatrick, 2016; Williams et al., 2018; Zhang et al., 2016). Factors of the school context such as the existing support, the structure of the physical environment, the consistency of the rules applied and the feeling of belonging constitute as predictors of the students' perception of school safety (Williams et al., 2018).

The quality of life of adolescents can be influenced by several factors such as sociodemographic characteristics, namely gender and age (Lampropoulou, 2018; Nunes et al., 2016; Mínguez, 2020). Evidence points to girls as having a lower level of well-being and quality of life compared to boys (Kaye-Tzadok et al., 2017; Patalay & Fitzsimons, 2016) and for younger adolescents as having a higher level of well-being and quality of life (Gaspar et al., 2021; González-Carrasco et al., 2017; Liu et al., 2016).

The results of a study by Liu et al. (2016) pointed out that girls have a higher level of satisfaction with school when compared to boys. On the other hand, boys tend to like school less and have more difficulties than girls (Kaye-Tzadok et al., 2017; Liu et al., 2016; Marcenaro-Gutiérrez, et al., 2018). Evidence in the literature indicates that boys tend to have higher dropout rates, lower academic success and involvement (Lietaert et al., 2015). In this sense, the present study intends to analyze the role that the school and the relationships in this context have in the perception of quality of life of Portuguese adolescents.

## 2 Method

This work is part of the Health Behavior in School-aged Children/HBSC study (Inchley et al., 2016, 2018; Matos & Aventura Social Team, 2018), developed in collaboration with the World Health Organization (WHO). This is a survey carried out every 4 years, with an international protocol and which has been developed in Portugal since 1998 (Roberts et al., 2009). HBSC aims to study the behaviors of adolescents in their life contexts and their influence on health and well-being.

The HBSC 2018 study in Portugal was approved by the Ethics Committee of the Hospital de S. João of Porto and by MIMÉ (Monitoring of School Surveys). According to the protocol for applying the Health Behavior in School-aged Children (HBSC) questionnaire for 2018 (Inchley et al., 2018), the technique for choosing the sample was “cluster sampling” in which the unit of analysis was the class. In order to obtain a representative sample of the Portuguese school population, 42 Portuguese school groups were selected, in a total of 387 classes. The sample is representative for the school grades under study.

School groups participated voluntarily and informed consent was obtained from students' parents or legal guardians. The questionnaires were self-completed and carried out in the classroom. The answers to the questionnaire were obtained online and anonymously. More details on the data collection procedures of the HBSC study in Portugal can be found in Matos and Aventura Social Team (2018).

## 2.1 Participants

8215 adolescents were included in this specific study, of which 52.7% ( $N = 4327$ ) were female, aged between 10 and 22 years (including older students who attended the 12th grade), with an average age of 14.36 years ( $SD = 2.28$ ). The sample includes students from the 6th, 8th, 10th and 12th school grade, being distributed proportionally across five regions (North, Centre, Lisbon and Tagus Valley, Alentejo and Algarve). The adolescents' demographic characteristics are shown in Table 2.

Table 1 Measures and variables under study	Variables	Measures
	Gender	1 - Male, 2 - Female
	School grade	1-6th grade; 2-8th grade; 3-10th grade; 4-12th grade
	Region	1 - North; 2 - Center; 3 - Lisbon and Tagus Valley; 4 - Alentejo; 5 - Algarve
	Liking school	1 - Dislike; 2 - Like
	Liking peers	1 - Dislike/Indifferent; 2 - Like
	Liking teachers	1 - Dislike/Indifferent; 2 - Like
	Liking school breaks (between classes)	1 - Dislike/Indifferent; 2 - Like
	Liking classes	1 - Dislike/Indifferent; 2 - Like
	Pressure with schoolwork	1 - No; 2 - Yes
	Perception of academic success	1 - With no success/With little success; 2 - With success
	Perception of safety at school	1 - No; 2 - Yes
	Missing classes on purpose	1 - No; 2 - Yes
	Relationship with peers	Scale with three items, on a five-point Likert scale, with 1 being strongly agree and 5 being strongly disagree. Higher values reveal a better perception of acceptance by peers. $\alpha = 0.76$ .
	Relationship with teachers	Scale with three items, on a five-point Likert scale, with 1 being strongly agree and 5 being strongly disagree. Higher values reveal a better perception of acceptance and monitoring by teachers. $\alpha = 0.84$ .
	Concerns/Difficulties with school	Scale with nine items, on a three-point Likert scale, with 1 being always/very often and 5 being rarely/never. Higher values reveal less concerns or difficulties with school. $\alpha = 0.81$
	Quality of life (QoL)	Scale with 10 items with scores from 0 to 5. Minimum scores of 5 and maximum scores of 50. Higher scores reveal a better perception of quality of life. $\alpha = .83$ . The variable was dichotomized with reference to the adolescents' average of QoL (below average/above average).

## 2.2 Measures and Variables

Considering the objective of the present study, the following variables were considered (Table 1).

## 2.3 Data Analysis

Data were analyzed using SPSS version 25 for IOS. Descriptive statistics were performed to characterize the participants. The Chi-Square Test for independent variables was used to analyze the relationship of gender and quality of life with the sociodemographic characteristics (education and region), liking school, teachers, peers, school breaks (between classes) and classes, pressure with schoolwork, perception of academic success, perception of safety at school and missing classes on purpose. Independent sample t tests were used to analyze the relationship of gender and quality of life with the relationship with peers and teachers and with the concerns/difficulties with school.

A linear regression model (adjusted to age and gender) was developed to analyze the association between quality of life and the variables with statistical significance in the previous analysis. A significance level of  $p < 0.05$  was determined.

## 3 Results

The characterization of the participants is shown in Table 2, as well as the analysis of their differences by gender in relation to school-related variables. Statistically significant differences were found between the students' genders and almost all the school-related variables under study, except for the variables liking peers and perception of academic success. Girls like school, teachers, school breaks (between classes) and classes more than boys and present less concerns/difficulties with school. Compared to boys, they report

more pressure with the schoolwork and a better perception of safety at school. On the other hand, boys have a better relationship with their peers and teachers, miss more classes on purpose and report a higher perception of quality of life.

Table 3 presents the bivariate analysis of differences in students' quality of life (below or above average) and its relationship with school-related variables. Statistically significant differences were found between the adolescents' quality of life and all the variables under study.

An above-average QoL is statistically and significantly related to being a boy, being younger (8th grade), with liking school, peers, teachers, school breaks (between classes) and classes. It is also related with feeling less pressure with the schoolwork, a better perception of school success and of safety in the school environment. Additionally, having an above-average QoL is statistically significantly associated with having a better relationship with peers and teachers and less concerns/difficulties with school. On the other hand, a below-average QoL is statistically significantly associated with missing classes on purpose.

The linear regression model presented in Table 4 aimed to understand the impact of school-related variables on the adolescents' quality of life. The model includes significant variables in the bivariate analysis (Table 3) adjusted to gender and age,  $F(12,4343) = 151,19; p \leq 0.001$  and presented a variance value of 29.3%.

According to the model, QoL has a positive relationship with liking school, peers and school breaks (between classes), with the perception of safety in the school

**Table 2** Participants characteristics

	<i>M</i> ± <i>SD</i> or % (n)			<i>p</i>
	Total ( <i>n</i> = 8215)	Boys 47.3% ( <i>n</i> = 3888)	Girls 52.7% ( <i>n</i> = 4327)	
Age (years) <sup>1</sup>	14.36 ± 2.28	14.31 ± 2.28	14.40 ± 2.28	0.068
School grade <sup>2</sup>	30.7 (2520)	<b>32.4</b> (1260)	29.1 (1260)	≤ 0.001
6th grade	33.7 (2766)	34.4 (1336)	33.0 (1430)	
8th grade	20.8 (1711)	20.1 (782)	21.5 (929)	
10th grade	14.8 (1218)	13.1 (510)	<b>16.4</b> (708)	
12th grade				
Region <sup>2</sup>	40.9 (3360)	<b>42.8</b> (1664)	39.2 (1696)	0.002
North	16.9 (1390)	16.4 (638)	17.4 (752)	
Centre	23.5 (1927)	21.8 (847)	<b>25.0</b> (1080)	
Lisbon and Tagus Valley	9.2 (754)	9.1 (355)	9.2 (399)	
Alentejo	9.5 (784)	9.9 (384)	9.2 (400)	
Algarve				
Liking school <sup>2</sup>	30.5 (2393)	<b>34.1</b> (1272)	27.1 (1121)	≤ 0.001
Dislike	69.6 (5473)	65.9 (2453)	<b>72.9</b> (3020)	
Like				
Linking peers <sup>2</sup>	26.1 (1258)	25.5 (552)	26.6 (706)	0.371
Dislike/Indifferent	73.9 (3562)	74.5 (1615)	73.4 (1947)	
Like				
Liking teachers <sup>2</sup>	53.6 (2574)	<b>56.7</b> (1225)	51.1 (1349)	≤ 0.001
Dislike/Indifferent	46.4 (2226)	43.3 (936)	<b>48.9</b> (1290)	
Like				
Liking school breaks (between classes) <sup>2</sup>	21.1 (1015)	<b>23.7</b> (512)	19.0 (503)	≤ 0.001
Dislike/Indifferent	78.9 (3793)	76.3 (1651)	<b>81.0</b> (2142)	
Like				
Liking classes <sup>2</sup>	69.5 (3331)	<b>71.5</b> (1543)	67.8 (1788)	≤ 0.01
Dislike/Indifferent	30.5 (1465)	28.5 (616)	<b>32.2</b> (849)	
Like				
Pressure with schoolwork <sup>2</sup>	50.1 (3944)	<b>59.2</b> (2205)	42.0 (1739)	≤ 0.001
No	49.9 (3922)	40.8 (1520)	<b>58.0</b> (2402)	
Yes				
Perception of academic success <sup>2</sup>	51.5 (2408)	50.5 (1061)	52.4 (1347)	0.208
With no success/With little success	48.5 (2266)	49.5 (1040)	47.6 (1226)	
With success				
Missing classes on purpose <sup>2</sup>	83.9 (6561)	81.6 (3016)	<b>86.0</b> (3545)	≤ 0.001
No	16.1 (1256)	<b>18.4</b> (681)	14.0 (575)	
Yes				
Perception of safety at school <sup>2</sup>	4.4 (209)	<b>5.3</b> (112)	3.7 (97)	0.011
No	95.6 (4513)	94.7 (2012)	<b>96.3</b> (2501)	
Yes				
Relationship with peers <sup>1</sup>	11.80 ± 2.41	12.13 ± 2.35	11.51 ± 2.43	≤ 0.001
Relationship with teachers <sup>1</sup>	11.28 ± 2.52	11.44 ± 2.64	11.13 ± 2.39	≤ 0.001
Concerns/Difficulties with school <sup>1</sup>	19.04 ± 3.94	18.83 ± 4.29	19.22 ± 3.62	≤ 0.001
Quality of life (QoL) <sup>1</sup>	36.43 ± 7.28	37.56 ± 7.58	35.49 ± 6.88	≤ 0.001
QoL below average <sup>2</sup>	47.0 (2331)	37.9 (857)	<b>54.6</b> (1474)	
QoL above average <sup>2</sup>	53.0 (2631)	<b>62.1</b> (1405)	45.4 (1226)	

<sup>1</sup>Independent Sample t-test; <sup>2</sup>Chi-square

Adjusted residuals > 1.96

Abbreviations: M, Mean; SD, standard deviation.

**Table 3** Bivariate analysis between adolescents' quality of life (QoL) and school-related variables

	QoL below average	QoL above average	
	% or $M \pm SD$	$p$	
Age (years) <sup>1</sup>	15.77 $\pm$ 1.83	15.31 $\pm$ 1.77	$\leq$ 0.001
Gender <sup>2</sup>	36.8 (857)	<b>53.4</b> (1405)	$\leq$ 0.001
Male	<b>63.2</b> (1474)	46.6 (1226)	
Female			
School grade <sup>2</sup>	41.3 (963)	<b>51.5</b> (1354)	$\leq$ 0.001
6th grade	32.1 (749)	29.1 (765)	
8th grade	<b>26.6</b> (619)	19.5 (512)	
10th grade			
12th grade			
Region <sup>2</sup>	34.1 (794)	<b>39.7</b> (1045)	$\leq$ 0.001
North	19.2 (447)	18.5 (486)	
Centre	<b>27.9</b> (650)	22.6 (595)	
Lisbon and Tagus valey	9.0 (210)	9.8 (257)	
Alentejo	9.9 (230)	9.4 (248)	
Algarve			
Liking school	<b>44.2</b> (1030)	26.8 (704)	$\leq$ 0.001
Dislike	55.8 (1301)	<b>73.2</b> (1927)	
Like			
Liking peers <sup>2</sup>	<b>37.9</b> (835)	16.0 (402)	$\leq$ 0.001
Dislike/Indifferent	62.1 (1370)	<b>84.0</b> (2116)	
Like			
Liking teachers <sup>2</sup>	<b>64.0</b> (1406)	44.3 (1110)	$\leq$ 0.001
Dislike/Indifferent	36.0 (792)	<b>55.7</b> (1394)	
Like			
Liking school breaks (between classes) <sup>2</sup>	<b>31.1</b> (685)	12.1 (304)	$\leq$ 0.001
Dislike/Indifferent	68.9 (1520)	<b>87.9</b> (2202)	
Like			
Liking classes <sup>2</sup>	<b>78.7</b> (1730)	61.1 (1530)	$\leq$ 0.001
Dislike/Indifferent	21.3 (467)	<b>38.9</b> (973)	
Like			
Pressure with schoolwork <sup>2</sup>	28.9 (674)	<b>51.4</b> (1352)	$\leq$ 0.001
No	<b>71.1</b> (1657)	48.6 (1279)	
Yes			
Perception of academic success <sup>2</sup>	<b>64.8</b> (1384)	39.8 (975)	$\leq$ 0.001
With no success/With little success	35.2 (752)	<b>60.2</b> (1474)	
With success			
Missing classes on purpose <sup>2</sup>	77.0 (1786)	<b>86.6</b> (2270)	$\leq$ 0.001
No	<b>23.0</b> (532)	13.4 (351)	
Yes			
Perception of safety at school <sup>2</sup>	<b>6.5</b> (140)	2.5 (61)	$\leq$ 0.001
No	93.5 (2027)	<b>97.5</b> (2403)	
Yes			
Relationship with peers <sup>1</sup>	11.00 $\pm$ 2.57	12.22 $\pm$ 2.26	$\leq$ 0.001
Relationship with teachers <sup>1</sup>	10.22 $\pm$ 2.49	11.46 $\pm$ 2.35	$\leq$ 0.001
Concerns/Difficulties with school <sup>1</sup>	18.03 $\pm$ 3.86	19.95 $\pm$ 3.79	$\leq$ 0.001

<sup>1</sup>Independent Sample t-test; <sup>2</sup>Chi-square.

Adjusted Residuals &gt; 1.96

Abbreviations: M, Mean; SD, standard deviation.

**Table 4** Linear regression

between adolescents' quality of life and school-related variables

The results were for age and gender.

The variables were entered using the "enter" mode.

\*\* $p \leq 0.01$ ; \*\*\* $p \leq 0.001$ 

	Non-Standardized Coefficient		Standardized Coefficient	$t$
	B	Standard error	$\beta$	
Liking school	0.92	0.22	0.06***	4.24
Liking peers	1.71	0.27	0.10***	6.45
Liking teachers	0.06	0.24	0.01	0.27
Liking school breaks (between classes)	2.46	0.26	0.14***	9.47
Liking classes	0.28	0.25	0.02	1.13
Pressure with schoolwork	-2.37	0.19	-0.16***	-12.25
Perception of academic success	2.34	0.19	0.16***	12.18
Missing classes on purpose	-0.94	0.25	-0.05***	-3.77
Perception of safety at school	2.00	0.46	0.06***	4.31

Relationship with peers	0.24	0.05	0.08***	5.43
Relationship with teachers	0.29	0.05	0.10***	6.44
Concerns/Difficulties with school	0.27	0.03	0.15***	10.63

environment, with the perception of academic success, with the relationship with peers and teachers and with the concerns/difficulties with school. This means that liking school, peers and school breaks (between classes), having a better perception of school success and of safety in the school environment, a better relationship with peers and teachers and less concerns/difficulties with the school are associated with a better QoL. Additionally, QoL has a negative relationship with pressure with school- work and with missing classes on purpose, which means that feeling more pressure and intentionally missing classes is related to a lower QoL.

#### 4 Discussion

The results indicate the existence of statistical and significant differences between genders. Girls report liking school, teachers, school breaks (between classes) and classes more than boys as well as less concerns/difficulties with school. Compared to boys, they report more pressure with the schoolwork and a better perception of safety at school.

A study by Côté-Lussier and Fitzpatrick (2016) showed a link between school safety and student engagement. Girls tend to be less involved in physical confrontations/conflicts or to face fewer assaults or threats from their peers, which makes them feel safer at school (Feliciano, 2012). The literature has always shown gender differences in expectations and academic results, pointing to girls as those who usually present more positive results (Carvalho, 2016; Feliciano, 2012). According to this study results, girls report feeling more pressure with schoolwork and although boys have a better relationship with their peers and teachers, they miss more classes on purpose. The literature points out that girls are more focused and demanding with their studies, dedicate more hours to schoolwork and studies and have higher levels of stress than boys. In turn, boys tend to have less school involvement and stress which is reflected in their academic results (Feliciano, 2012; Houtte, 2010; Lietaert et al., 2015; Moksnes et al., 2010; Östberg et al., 2015).

Adolescents who have an above-average quality of life are those who like school, peers and teachers, as well as classes and school breaks (between classes), have a better perception of academic success, feel less pressure with the schoolwork and have less concerns or difficulties with school. It is also these adolescents who have a better relationship with peers and teachers and have a better perception of safety within the school environment. A recent systematic review carried out by Aldridge and McChesney (2018) allowed us to observe a relationship between the school climate and the mental health of young people, which in turn is reflected in their wellbeing and quality of life. A study by Kutsar and Kasearu (2017) revealed that students who have a better relationship with teachers and who feel safe at school are more likely to report that they like going to school. The results of this study also indicated a decreasing trend towards liking school as adolescents get older.

Feeling safe at school is a very relevant aspect regarding the students' learning and academic success and is reflected in their well-being and quality of life (Côté-Lussier & Fitzpatrick, 2016; Gaspar et al., 2020; Williams et al., 2018). In addition, the type of environment experienced at school can constitute a risk or a protective factor regarding the perception of safety at school (Williams et al., 2018). A study by Williams et al. (2018) concluded that factors such as positive relationships between teachers and students, consistency in terms of rules and a sense of belonging and integration are associated with an increase in the perception of safety at school.

According to Aldridge et al. (2016), the support of teachers, the relationship between the peer group and the feeling of connection with the school are some of the factors that mirror the type of school environment and that are associated with the well-being of students. Evidence in the literature suggests that the safety of the environments present in the adolescents' life tends to be reflected in an increase in life satisfaction and well-being. The nature and quality of the relationships that are developed in these contexts are also important for the adolescents' psychosocial wellbeing (Lee & Yoo, 2015).

A study by Powell et al. (2018) gathered testimonies from adolescents regarding the factors they consider important for their well-being, with interpersonal relationships (e.g. teachers, friends, peer groups and significant others) emerging as a central theme. Therefore, the relationships established between the agents of the school context are reflected in the adolescents' psychosocial wellbeing (Allen et al., 2018; Fatou & Kubisszewski, 2018; Kiefer et al., 2015; Liu et al., 2016; Singla et al., 2021), as well as the peers support and the feeling of connection and security in the school context (Lester & Cross, 2015).

Considering the results obtained, it is important to create and deepen strategies that help to promote greater identification of students with school (especially boys). It is essential to promote the creation of affective bonds with the school context, so that adolescents have a more positive attitude towards school (Tomé et al., 2019; Matos & Equipa Aventura Social, 2018). Therefore, the need and importance to develop actions aimed at children and adolescents is underlined. These actions should promote a positive feeling towards school, a healthy and supportive school environment and more adjusted and positive future expectations (with an impact on the professional future) (Matos & Aventura Social Team, 2018).

It is necessary to reflect and intervene in the withdrawal of students from school (there has been a decreasing trend towards liking school), in the management of anxiety related to schoolwork, in the pressure of parents regarding grades, as well as in future expectations. At a time when the psychological well-being of students has been recurrently disturbed by the various confinements associated with the COVID-19 pandemic (Matos, 2020, 2022; Matos & Wainwright, 2021; Matos & Wainwright, 2021) it is crucial that schools reflect on their practices, school curriculums (i.e. if they are adjusted and updated) and quality of their school environments.

The present study has some limitations that must be considered. Firstly, this is a self-report study, and there may be some bias in the responses. Secondly, this is a cross-sectional study, which does not allow us to make inferences about causality. Thirdly, the data only include students from the public school system, and it is not possible to generalize to all Portuguese adolescents (not having been covered, for example, students from the private school system). Despite these limitations, the HBSC study presents a very rigorous, large-scale methodology, which allows comparisons with other countries in the HBSC network, as well as with the various HBSC studies carried out in Portugal since 1998.



## 5 Conclusions

In previous studies, it was shown that schools can become true ecosystems of health and well-being and the physical, academic, interpersonal, affective, leadership and participation conditions that contribute to this optimization were also mentioned.

The results of this study indicate that liking classes and teachers does not have a significant impact on the quality of life and well-being of adolescents. Therefore, it is suggested to explore these results in future studies, since they are important aspects of the functioning of the school ecosystem and that should be part of interventions aimed at promoting well-being in this context.

Another important aspect is the relevance of the relationship with peers and the perception of safety at school as significant aspects for the adolescents' quality of life. This reinforces the importance of considering these factors when designing strategies and interventions aimed at the educational context. It is also important to explore the difference between liking teachers and the relationship that exists with them, in order to deepen the results obtained in this study regarding the different impact that these two variables have on the quality of life of adolescents.

In this context, the recurring themes are the focus on building skills and opportunities, the social cohesion, the feeling of sharing and rooting and the possibility of active participation in school life (Aventura Social, 2020a, b).

## Declarations

**Compliance with Ethical Standards** The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. Fábio Botelho Guedes has a scholarship from the Foundation for Science and Technology (SFRH/BD/148299/2019). Ana Cerqueira has a scholarship from the Foundation for Science and Technology (SFRH/BD/148403/2019).

## References

- Aldridge, J. M., Fraser, B. J., Fozdar, F., Ala'i, K., Earnest, J., & Afari, E. (2016). Students' perceptions of school climate as determinants of wellbeing, resilience and identity. *Improving Schools*, 19(1), 5-26. <https://doi.org/10.1177/1365480215612616>
- Aldridge, J. M., & McChesney, K. (2018). The relationships between school climate and adolescent mental health and wellbeing: A systematic literature review. *International Journal of Educational Research*, 88, 121-145. <https://doi.org/10.1016/j.ijer.2018.01.012>
- Allen, K., Kern, M. L., Vella-Brodrick, D., Hattie, J., & Waters, L. (2018). What schools need to know about fostering school belonging: A meta-analysis. *Educational Psychology Review*, 30(1), 1-34. <https://doi.org/10.1007/s10648-016-9389-8>
- Anderson, D. L., & Graham, A. P. (2016). Improving student wellbeing: Having a say at school. *School Effectiveness and School Improvement*, 27(3), 348-366. <https://doi.org/10.1080/09243453.2015.1084336>
- Aventura Social. (2020a). *EsABE: Ecosistemas de aprendizagem e bem-estar- perfil dos agrupamentos que promovem o perfil do aluno à saída da escolaridade obrigatória [EsABE: learning ecosystems and well-being - profile of the groups that promote the profile of the student at the end of compulsory education]*. FMH/DGE. (DGE Working document).
- Aventura Social. (2020b). *EsABE: Ecosistemas de aprendizagem e bem-estar - trajetórias de evolução e recomendações [EsABE: learning ecosystems and well-being - evolution trajectories and recommendations]*. FMH/DGE (DGE Working document).
- Bücker, S., Nuraydin, S., Simonsmeier, B. A., Schneider, M., & Luhmann, M. (2018). Subjective wellbeing and academic achievement: A meta-analysis. *Journal of Research in Personality*, 74, 83-94. <https://doi.org/10.1016/j.jrp.2018.02.007>
- Carvalho, R. G. G. (2016). Gender differences in academic achievement: The mediating role of personality. *Personality and Individual Differences*, 94, 54-58. <https://doi.org/10.1016/j.paid.2016.01.011>
- Côté-Lussier, C., & Fitzpatrick, C. (2016). Feelings of safety at school, socioemotional functioning, and classroom engagement. *Journal of Adolescent Health*, 58(5), 543-550. <https://doi.org/10.1016/j.jadohealth.2016.01.003>
- Daily, S. M., Mann, M. J., Kristjansson, A. L., Smith, M. L., & Zullig, K. J. (2019). School climate and academic achievement in middle and high school students. *Journal of School Health*, 89(3), 173-180. <https://doi.org/10.1111/josh.12726>
- Fatou, N., & Kubiszewski, V. (2018). Are perceived school climate dimensions predictive of students' engagement? *Social Psychology of Education*, 21(2), 427-446. <https://doi.org/10.1007/s11218-017-9422-x>
- Feliciano, C. (2012). The female educational advantage among adolescent children of immigrants. *Youth & Society*, 44(3), 431-449. <https://doi.org/10.1177/0044118X11404441>
- Gaspar, T., Cerqueira, A., Guedes, F. B., Raimundo, M., & Matos, M. G. (2021). Fatores psicossociais promotores de desenvolvimento positivo ao longo da vida [Psychosocial factors promoting positive development throughout life]. *Psicologia Saúde & Doença*, 22(1), 142-160. <https://doi.org/10.15309/21psd220113>
- Gaspar, T., Tomé, G., Ramiro, L., Almeida, A., & Matos, M. G. (2020). Ecosistemas de aprendizagem e bem-estar: fatores que influenciam o sucesso escolar [Learning ecosystems and well-being: Factors that influence school success]. *Psicologia Saúde & Doença*, 21(2), 462-481. <https://doi.org/10.15309/20psd210221>
- González-Carrasco, M., Casas, F., Malo, S., Vinas, F., & Dinisman, T. (2017). Changes with age in subjective well-being through the adolescent years: Differences by gender. *Journal of Happiness studies*, 18(1), 63-88. <https://doi.org/10.1007/s10902-016-9717-1>
- Houtte, M. V. (2010). Why boys achieve less at school than girls: the difference between boys' and girls' academic culture. *Educational Studies*, 30(2), 159-173. <https://doi.org/10.1080/0305569032000159804>
- Inchley, J. C., Currie, D. B., Young, T., Samdal, O., Torsheim, T., Augustson, L., Mathison, F., Aleman-Diaz, A., Molcho, M., Weber, M., & Bamekow, V. (Eds.). (2016). *Growing up unequal: Gender and socioeconomic differences in young people's health and well-being: Health Behaviour in School-aged children (HBSC) study: International report from the 2013/2014 survey*. World Health Organization (WHO) Regional Office for Europe.
- Inchley, J., Currie, D., Cosma, A., & Samdal, O. (Eds.). (2018). *Health Behaviour in Schoolaged Children (HBSC) study protocol: Background, methodology and mandatory items for the 2017/18 survey*. CAHRU.
- Jayanthi, P., Thirunavukarasu, M., & Rajkumar, R. (2015). Academic stress and depression among adolescents: A cross-sectional study. *Indian Pediatrics*, 52(3), 217-219.
- Kaye-Tzadok, A., Kim, S. S., & Main, G. (2017). Children's subjective well-being in relation to gender — what can we learn from dissatisfied children? *Children and Youth Services Review*, 80, 96-104. <https://doi.org/10.1016/j.chilcyouth.2017.06.058>
- Kiefer, S. M., Alley, K. M., & Ellerbrock, C. R. (2015). Teacher and peer support for young adolescents' motivation, engagement, and school belonging. *Rmle Online*, 38(8), 1-18. <https://doi.org/10.1080/19404476.2015.11641184>
- Kiuru, N., Wang, M. T., Salmela-Aro, K., Kannas, L., Ahonen, T., & Hirvonen, R. (2020). Associations between adolescents' interpersonal relationships, school well-being, and academic achievement during educational transitions. *Journal of Youth and Adolescence*, 49(5), 1057-1072. <https://doi.org/10.1007/s10964-019-01184-y>
- Kutsar, D., & Kasearu, K. (2017). Do children like school-crowding in or out? International comparison of children's perspectives. *Children and Youth Services Review*, 80, 140-148. <https://doi.org/10.1016/j.chilcyouth.2017.06.052>
- Kutsyruba, B., Klinger, D. A., & Hussain, A. (2015). Relationships among school climate, school safety, and student achievement and well-being: A review of the literature. *Review of Education*, 3(2), 103135. <https://doi.org/10.1002/rev3.3043>
- Lampropoulou, A. (2018). Personality, school, and family: What is their role in adolescents' subjective well-being. *Journal of Adolescence*, 67, 12-21. <https://doi.org/10.1016/j.adolescence.2018.05.013>
- Lee, B. J., & Yoo, M. S. (2015). Family, school, and community correlates of children's subjective wellbeing: An international comparative study. *Child Indicators Research*, 8(1), 151-175. <https://doi.org/10.1007/s12187-014-9285-z>
- Lester, L., & Cross, D. (2015). The relationship between school climate and mental and emotional wellbeing over the transition from primary to secondary school. *Psychology of Well-being*, 5(1), 1-15. <https://doi.org/10.1186/s13612-015-0037-8>
- Lietart, S., Roorda, D., Laevers, F., Verschueren, K., & De Fraine, B. (2015). The gender gap in student engagement: The role of teachers' autonomy support, structure, and involvement. *British Journal of Educational Psychology*, 85(4), 498-518. <https://doi.org/10.1111/bjep.12095>
- Liu, W., Mei, J., Tian, L., & Huebner, E. S. (2016). Age and gender differences in the relation between school-related social support and subjective well-being in school among students. *Social Indicators Research*, 125(3), 1065-1083. <https://doi.org/10.1007/s11205-015-0873-1>
- Lombardi, E., Traficante, D., Bettoni, R., Offredi, I., Giorgetti, M., & Vernice, M. (2019). The impact of school climate on well-being experience and school engagement:

- A study with high-school students. *Frontiers in Psychology*, 10, 2482. <https://doi.org/10.3389/fpsyg.2019.02482>
- Marcenaro-Gutiérrez, O., López-Agudo, L. A., & Ropero-García, M. A. (2018). Gender differences in adolescents' academic achievement. *Young*, 26(3), 250-270. <https://doi.org/10.1177/1103308817715163>
- Matos, M. G. (2020). *Adolescentes, as suas vidas, o seu futuro*. Fundação Francisco Manuel dos Santos. Matos, M. G. (2022). *Adolescentes*. Oficina do Livro.
- Matos, M. G., & Equipa Aventura Social. (2018). *A saúde dos adolescentes portugueses após a recessão. Relatório do estudo Health Behaviour in School Aged Children (HBSC) em 2018* (ebook). [The health of Portuguese adolescents after the recession. Report of the study Health Behavior in School Aged Children (HBSC) in 2018 (ebook)]. [http://aventurasocial.com/publicacoes/publicacao\\_1545534554.pdf](http://aventurasocial.com/publicacoes/publicacao_1545534554.pdf)
- Matos, M. G., & Wainwright, T. (2021). COVID-19 and mental health in school-aged children and young people: Thinking ahead while preparing the return to school and to life "as usual". *The Psychologist: Practice & Research Journal*, 4(1). <https://doi.org/10.33525/pprj.v4i1.105>
- McGrath, K. F., & Van Bergen, P. (2015). Who, when, why and to what end? Students at risk of negative student-teacher relationships and their outcomes. *Educational Research Review*, 14, 1-17. <https://doi.org/10.1016/j.edurev.2014.12.001>
- Mínguez, A. M. (2020). Children's relationships and happiness: The role of family, friends and the school in four European countries. *Journal of Happiness Studies*, 21(5), 1859-1878. <https://doi.org/10.1007/s10902-019-00160-4>
- Moksnes, U. K., Moljord, I. E., Espnes, G. A., & Byrne, D. G. (2010). The association between stress and emotional states in adolescents: The role of gender and self-esteem. *Personality and Individual Differences*, 49(5), 430-435. <https://doi.org/10.1016/j.paid.2010.04.012>
- Nunes, C., Hernando, Á., Lemos, I., Ayala-Nunes, L., Oliva, C. R., & Coronado, C. M. (2016). Quality of life of portuguese and spanish adolescents. A comparative study between natives and immigrants. *Ciência & Saúde Coletiva*, 21, 1137-1144. <https://doi.org/10.1590/1413-81232015214.09992015>
- Oberle, E. (2018). Early adolescents' emotional well-being in the classroom: The role of personal and contextual assets. *Journal of School Health*, 88(2), 101-111. <https://doi.org/10.1111/josh.12585>
- OECD. (2017). *PISA 2015 results (volume III): Students' well-being, PISA*. OECD Publishing. <https://doi.org/10.1787/9789264273856-en>
- Patalay, P., & Fitzsimons, E. (2016). Correlates of mental illness and wellbeing in children: Are they the same? Results from the UK Millennium cohort study. *Journal of the American Academy of Child & Adolescent Psychiatry*, 55(9), 771-783. <https://doi.org/10.1016/j.jaac.2016.05.019>
- Powell, M. A., Graham, A., Fitzgerald, R., Thomas, N., & White, N. E. (2018). Wellbeing in schools: what do students tell us? *The Australian Educational Researcher*, 45(4), 515-531. <https://doi.org/10.1007/s13384-018-0273-z>
- Quin, D. (2017). Longitudinal and contextual associations between teacher-student relationships and student engagement: A systematic review. *Review of Educational Research*, 87(2), 345-387. <https://doi.org/10.3102/0034654316669434>
- Rönkä, A., Malinen, K., Metsapelto, R. L., Laakso, M. L., Sevón, E., & Verhoef-van Dorp, M. (2017). Parental working time patterns and children's socioemotional wellbeing: Comparing working parents in Finland, the United Kingdom, and the Netherlands. *Children and Youth Services Review*, 76, 133-141.
- Roberts, C., Freeman, J., Samdal, O., Schnohr, C., Looze, M., Nic Gabhainn, S., Iannotti, I., Rasmussen, M., Matos, M. G., & the International HBSC Study Group. (2009). The Health Behaviour in School-aged children (HBSC) study: Methodological developments and current tensions. *International Journal of Public Health*, 54(Suppl. 2), 140-150.
- Singla, D. R., Shinde, S., Patton, G., & Patel, V. (2021). The mediating effect of school climate on adolescent mental health: Findings from a randomized controlled trial of a school-wide intervention. *Journal of Adolescent Health*, 69(1), 90-99. <https://doi.org/10.1016/j.jadohealth.2020.09.030>
- Östberg, V., Almqvist, Y. B., Folkesson, L., Laftman, S. B., Modin, B., & Lindfors, P. (2015). The complexity of stress in mid-adolescent girls and boys. *Child Indicators Research*, 8(2), 403-423. <https://doi.org/10.1007/s12187-014-9245-7>
- Tomé, G., Gómez-Baya, D., Cerqueira, A., & Matos, G. M. (2019). Que escola é precisa para aprender, sem pôr em perigo o bem-estar e as relações interpessoais dos adolescentes. *Revista de Psicologia da Criança e dos Adolescentes*, 10(1), 63-73.
- Varela, J. J., Sirlópu, D., Melipillán, R., Espelage, D., Green, J., & Guzmán, J. (2019). Exploring the influence school climate on the relationship between school violence and adolescent subjective wellbeing. *Child Indicators Research*, 12(6), 2095-2110. <https://doi.org/10.1007/s12187-019-09631-9>
- Wang, M. T., Chow, A., Hofkens, T., & Salmela-Aro, K. (2015). The trajectories of student emotional engagement and school burnout with academic and psychological development: Findings from Finnish adolescents. *Learning and Instruction*, 36, 57-65. <https://doi.org/10.1016/j.learninstruc.2014.11.004>
- Williams, S., Schneider, M., Wornell, C., & Langhinrichsen-Rohling, J. (2018). Student's perceptions of school safety: It is not just about being bullied. *The Journal of School Nursing*, 34(4), 319-330. <https://doi.org/10.1177/1059840518761792>
- Zhang, X., Xuan, X., Chen, F., Zhang, C., Luo, Y., & Wang, Y. (2016). The relationship among school safety, school liking, and students' self-esteem: based on a multilevel mediation model. *Journal of school health*, 86(3), 164-172. <https://doi.org/10.1111/josh.12364>

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations. Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.

## Authors and Affiliations

**Fábio Botelho Guedes<sup>1,2,3</sup> • Ana Cerqueira<sup>1,2</sup> • Susana Gaspar<sup>1,4</sup> • Tania Gaspar<sup>1,5</sup> • Carmen Moreno<sup>6</sup> • Margarida Gaspar de Matos<sup>1,7,8</sup>**

Fábio Botelho Guedes [fabiototelhoguedes@gmail.com](mailto:fabiototelhoguedes@gmail.com)

<sup>1</sup> Institute of Environmental Health (ISAMB)/Aventura Social, Faculty of Medicine, University of Lisbon (FMUL), Lisbon, Portugal

<sup>2</sup> Faculty of Human Kinetics, University of Lisbon/FMH-UL, Lisbon, Portugal

<sup>3</sup> Lusíada Center for Research in Social Work and Social Intervention (CLISSIS), Lusíada University of Lisbon, Lisbon, Portugal

<sup>4</sup> High School of Health, Beja Polytechnic Institute, Beja, Portugal

<sup>5</sup> Lusófona University/HEI-LAB, Lisbon, Portugal

<sup>6</sup> University of Seville, Seville, Spain

<sup>7</sup> APPSYci, ISPA - University Institute, Lisbon, Portugal

<sup>8</sup> CENC - Centre for Electroencephalography and Clinical Neurophysiology, Lisbon, Portugal