Relations Among Psychological Resilience, Exam Anxiety, and School Satisfaction in a Large Sample of Azerbaijani Adolescents

Elnur Rustamov[*] [iD]
Psychology Scientific Research Institute,
AZERBAIJAN

Matanat Aliyeva
Psychology Scientific Research Institute,
AZERBAIJAN

Ulviyya Nahmatova [iD]
Psychology Scientific Research Institute,
AZERBAIJAN

Fuad Asadov [iD]
Psychology Scientific Research Institute, AZERBAIJAN

Gulay Mammadzada [iD]
Psychology Scientific Research Institute, AZERBAIJAN

Abstract: The purpose of this study was to examine whether exam anxiety played a role as a mediator in the relationship between psychological resilience and school satisfaction in a large sample of adolescents (N = 1819; Mage = 15.16, SD = 0.95) who live in different regions of Azerbaijan. Adolescents' psychological resilience was positively associated with school satisfaction, whereas their exam anxiety level was negatively associated with school satisfaction. Structural equation modeling results showed that exam anxiety partially mediated the relationships between psychological resilience and school satisfaction. Therefore, the indirect effect of psychological resilience on school satisfaction through exam anxiety was also statistically significant.

Keywords: *Adolescent, exam anxiety, psychological resilience, school satisfaction.*

Introduction

Anxiety is a state of arousal characterized by emotional and mental changes experienced by a person when faced with a stimulus (Miceli & Castelfranchi, 2015). According to another description, anxiety is a state manifested by bodily and mental changes, the feeling experienced by a person when confronted with a stimulus (Zhang et al., 2020). One of the main triggers of anxiety and anxiety disorders in adolescents during their school years is examinations. Although this is the most common way of measuring adolescents` performance and success and a very important evaluation tool in the educational system of Azerbaijan, it is also known to cause severe stress and is currently a widespread problem across countries, cultures and ethnic groups, and should be considered in the context of a possible negative influence on the adolescents' mental health (Wong et al., 2006).

Exam-related anxiety can be conceptualized as the interaction between adolescents` environmental stressors, the student's rational evaluation, coping with test-related stressors and the resulting psychological or physiological response (Lee & Larson, 2000). Anxiety and worry experienced during exams are often associated with fear of failure and can negatively impact a student's self-esteem (Aliyev, 2019). Exam anxiety has been reported to have degrading cognitive effects, including difficulties with memory and memorization of information. There is a significant positive relationship between achievement motivation and academic achievement and a negative relationship between anxiety and academic achievement (Alam, 2001). While people with normal levels of anxiety see exam situations as an opportunity to test their success, people with high anxiety perceive these situations as threats and engage in negative self-dialogue in exam-related situations.

Psychological evaluations show that although the degree of physiological arousal is the same before and after the exam, people with normal anxiety perceived this stimulation as a cue to try harder on the exam, while those with high anxiety perceived it as a negative situation because they were extremely worried (Lotz & Sparfeldt, 2017).

---

[*] **Corresponding author:**
Elnur Rustamov, Psychology Scientific Research Institute, Ziya Bunyadov 38, Baku, Azerbaijan. ✉ elnur.r@psixologiyainstitutu.az

Although anxiety is generally perceived as a negative state, it is necessary for survival. If we don't feel anxious, we won't study or even prepare for an exam. In short, a little anxiety is vital. However, if people's worries are eternal, it leads to disharmony, failure and prevents them from doing their work successfully.

Exam anxiety is a serious problem that lowers adolescents' academic success, prevents them from fully realizing their potential, causes some people to take a break from education, and negatively affects their life and career decisions. It results from negative feelings, thoughts, and behaviors associated with failure before and during exams, especially during late childhood and adolescence. "I can't concentrate", "I don't understand what I'm reading", "what if I don't get a good result in this exam?", "I'm incompetent anyway" are examples of sentences from a person`s internal monologue. Such negative automatic thoughts during or before the exam also affect their psychological resilience, and consequently, they feel anxious, leading to lower performance and school satisfaction (Elmore & Huebner, 2010).

According to research, low school satisfaction can negatively affect learning motivation (Aliyev, 2019). Furthermore, adolescents who are dissatisfied with school and feel socially isolated may develop disciplinary problems by avoiding school life, tending to skip lessons and engaging in inappropriate behavior (DeSantis King et al., 2006). As adolescents' school satisfaction increases, so do their academic success, self-confidence, self-esteem and perceived quality of school life (Verkuyten & Thijs, 2002). On the other hand, research shows that high school satisfaction in adolescents is negatively correlated with the tendency to focus on external problems and their level of anxiety and depression (Baker et al., 2003; Persson et al., 2016). School satisfaction is also related to life satisfaction and psychological resilience (Varela et al., 2018).

Psychological resilience refers to the ability of an individual to cope with various stresses in life, function productively, and create cooperative and mutual relations. Moreover, this is the foundation of social relations (Smith et al., 2010). Psychological resilience is also defined as the ability to recover quickly from psychological problems, negative experiences or stress. (Satici et al., 2023). In other words, resilience is a person's ability to successfully overcome adverse circumstances and adapt to a new situation (Labrague, 2021).

Adolescents face many adverse situations and shocking and stressful life events throughout their school life, and not everyone reacts to stressful situations the same way. Young people with these negative experiences have different reactions to these situations or strategies to cope with these situations. Some people can experience various problems, such as anxiety and depression, during stressful and traumatic situations; as a result, their depressed mood can last longer than expected in these situations. Other people can get out of the mood caused by such negative experiences and quickly return to their normal life. It depends more on the level of psychological resilience (Smith et al., 2008). The positive psychology approach explains the ability of individuals to restore themselves and quickly return to everyday normal lives by the concept of psychological resilience. A low level of psychological resilience is thought to be associated with decreased mood and to increase the risk of depressive disorders, acute stress reactions, post-traumatic stress disorder and various forms of pathological behavior. It is also considered that psychological resilience problems can lead to anxiety disorders, in particular to exam-related anxiety (Seligman, 2011).

This study aimed to assess the relationship between psychological resilience, exam anxiety and school satisfaction and the association of demographic, social, family and various educational factors with the degree of exam-related anxiety. From this point of view, with the participation of many adolescents, the aim was to find out. Below is the hypothesized model of the research.
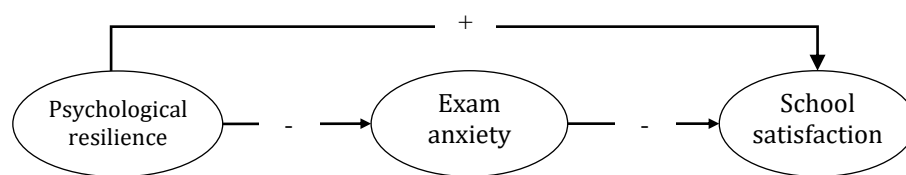

Figure 1. Hypothesized Mediational Model.

Thus, there is a direct relationship between school satisfaction and psychological resilience

but an inverse relationship with exam anxiety. In other words, the higher the adolescent`s psychological resilience the lower the exam anxiety, the higher the school satisfaction.

Methodology

Research Design

This study used a quantitative research design to investigate the mediation of exam anxiety between psychological resilience and school satisfaction. It was carried out using Structural Equation Modeling (SEM), which is one of the most

effective quantitative research design. SEM is used to demonstrate the associations between variables. The connections shown in SEM indicate the researchers' hypotheses.

Sample and Data Collection

Participants were 1819 adolescent from several regions of Baku, Azerbaijan. The final sample consisted of 1023 (56.2%) females and 796 (43.8%) males between 13 and 18 years of age (*M* = 15.16, *SD* = 0.95). In terms of perceived academic success; 165 (9.1%) were low, 1021 (56.1%) were moderate, and 634 (34.8%) were high. Most of the participants have middle socio-economic status (75.5%). Regarding siblings, 7.8% of the adolescent have one sibling, 56.7% two siblings, and 40.5% three or above siblings. The detailed information of participants is given in Table 1.

Measures

Brief Psychological Resilience Scale (BPRS; Smith et al., 2008)*.* The BPRS, which is used to measure the level of individual resilience. BPRS is a 5-point Likert-type (1 = strongly disagree to 5 = strongly agree) measurement tool for self-assessment consisting of 6 items (e.g., "It does not take me long to recover from a stressful event"). A high score from the scale means a high level of psychological resilience. BPRS was significantly related with depression, anxiety, and perceived stress. In addition, the Cronbach alpha values were calculated as .80–.91 for different populations (Smith et al., 2008).

Table 1. Sample Descriptive (N = 1819)

Variable	Frequency (n)	%
Gender		
Female	1023	56.2
Male	796	43.8
Class level		
Ninth class	754	41.4
Tenth class	625	34.4
Eleventh class	440	24.2
Perceived academic success		
Low academic achievement	165	9.1
Medium academic achievement	1021	56.1
High academic achievement	634	34.8
Number of siblings		
1 sibling	142	7.8
2 siblings	941	51.7
3 siblings and above	736	40.5
Status of parents		
Together	1624	89.3
Divorced	195	10.7
Perceived socio-economic status		
Low socio-economic status	131	7.2
Medium socio-economic status	1373	75.5
High socio-economic status	315	17.3

Children's Overall Satisfaction with Schooling Scale (COSS; Randolph et al., 2009). The COSS, which is used to measure students' comprehensive school satisfaction. COSS is a 5-point Likert-type (1 = strongly disagree to 5 = strongly agree) measurement tool for self-assessment consisting of 6 items (e.g., "I like to go to school"). A score between 6 and 30 is taken from the scale. High scores indicate higher school satisfaction and learning at school. As a result of the validity study, it was seen that the scale consisted of a single factor and the factor loads of the items varied between 78 and 89 for the different samples. The internal consistency coefficients were found as .92-.90 (Randolph et al., 2009).

Westside Test Anxiety Scale (WTAS; Driscoll, 2007). The WTAS was designed to investigate exam anxiety. In descriptive factor analysis, the scale explained variance of 46.05%, factor loadings between 32 and 78 and there is a one-dimensional structure have been determined. In the confirmatory factor analysis, the single-factor structure of the scale was confirmed. The test-retest reliability of the scale was between .47-.71 and the Cronbach alpha coefficient was reported as .89 (Driscoll, 2007).

Data Analysis

Before performing the main analysis, the researchers calculated the preliminary analysis to refine and check the suitability of the data. Therefore, descriptive analyses were conducted to obtain means, standard deviations, skewness, and kurtosis using IBM SPSS Statistics version 26. It was observed that the assumptions of normality were met by determining that the skewness and kurtosis values were between -2 and +2 (see Table 2). Then, two-step approach

(measurement model and structural model) structural equation modeling was to examine mediating role of exam anxiety relationship between psychological resilience and school satisfaction. The model's fit with the data was tested using chi-square statistics (CMIN), degrees of freedom (df), comparative fit index (CFI), adjusted goodness-of-fit index (AGFI), goodness-of-fit index (GFI), root mean square error of approximation (RMSEA). We performed the structural equation modeling with AMOS Graphics.

Results

Table 1 reports the descriptive statistics and correlations among the study variables. As theoretically supported and expected, psychological resilience was significantly and negatively correlated to exam anxiety ($r = -.467$, $p < .001$), positively correlated to school satisfaction ($r = .235$, $p < .001$). In addition, exam anxiety was negatively associated with ($r = -.252$, $p < .01$).

Table 2. Descriptive Statistics and Correlations Among Study Variables

Variable	Mean	SD	Skewness	Kurtosis	1	2
1. Psychological resilience	19.20	5.02	-0.10	-0.04	–	
2. Exam anxiety	34.32	10.26	-0.02	-0.69	-.467**	–
3. School satisfaction	19.24	3.85	-0.80	0.23	.235**	-.252**

** $p < .01$

Measurement Models

In preliminary analyses we examined a measurement model with all three latent variables (psychological resilience, exam anxiety, and school satisfaction) related to their respective indicators. This measurement model fits the data well with χ^2 $_{(11, N = 1819)}$ = 70.11, $p < .001$; χ^2/df = 6.37; CFI = 0.989; GFI = 0.990; IFI = 0.989; TLI = 0.979; SRMR = 0.018; RMSEA = 0.054 C.I. [0.043, 0.067]. All indicators loaded significantly onto their corresponding latent constructs (ranged from 0.56 to 0.914, $p < .001$).

Structural Models

We first tested the full mediator model that not included direct paths from independent variable (psychological resilience) to dependent variable (school satisfaction) when age, gender, and socio-economic status as covariates. The full mediator model indicated an acceptable fit to data: χ^2 $_{(27, N = 1819)}$ = 261.34, $p < .001$; χ^2/df = 9.67; CFI = 0.958; GFI = 0.972; IFI = 0.958; TLI = 0.929; SRMR = 0.054; RMSEA = 0.069 C.I. [0.062, 0.077]; AIC = 317.34; ECVI = .175. Then, we tested partially mediated model which contained direct links from psychological resilience to school satisfaction. This model also revealed that an acceptable fit to the data [χ^2 $_{(26, N = 1819)}$ = 236.43, $p < .001$; χ^2/df = 9.09; CFI = 0.962; GFI = 0.975; IFI = 0.962; TLI = 0.934; SRMR = 0.051; RMSEA = 0.067 C.I. [0.059, 0.075]; AIC = 294.43; ECVI = .162]. As a results, the partially-mediated model was preferred due to the chi-square difference test ($\Delta\chi^2$ = 24.91, df = 1, $p < .001$) and smaller AIC – ECVI values. The coefficients of the partially mediated model are shown in Figure 2.
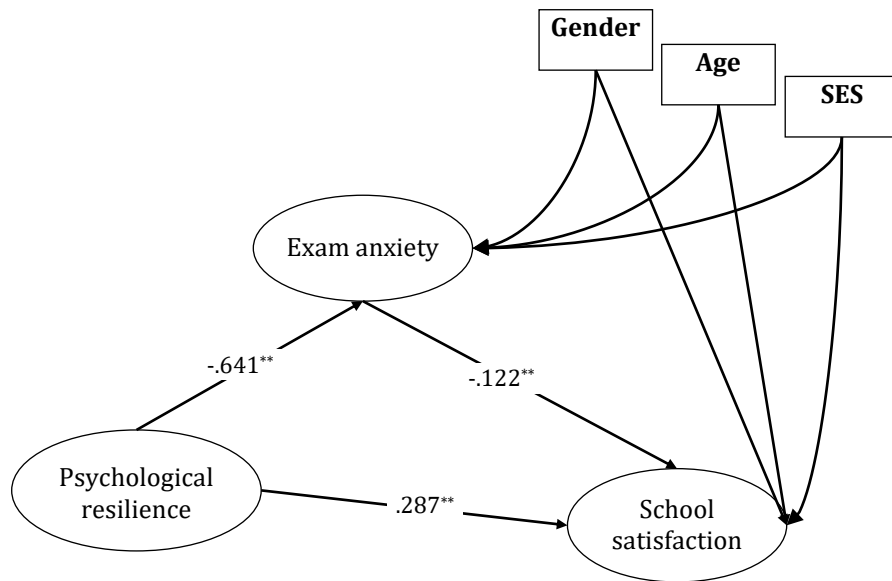

Figure 2. Standardized Factor Loadings for The Structural Model.
*Note. N = 1819; ** p < .01; SES Socio-Economic Status*

Discussion

School satisfaction in adolescents can affect both their present and future life. For this reason, school satisfaction in adolescents is a very important factor. This research aimed to clarify the relationship between psychological resilience and school satisfaction and whether exam anxiety mediates the relationship between psychological resilience and school satisfaction.

The results revealed that anxiety before exams mediates the relationship between psychological resilience and school satisfaction. The obtained results are discussed below. Thus, adolescents with low psychosocial resilience have a high level of anxiety. Severe anxiety before exams in adolescents can cause their decrease in their academic performance (Steinmayr et al., 2016). Because the greater the anxiety before the exam, the more difficult it is for adolescents to demonstrate their knowledge and successfully complete the given tasks, which, in turn, is reflected in the final results. Numerous research in this field have shown that high psychological resilience leads to various positive results; for example, it can increase students' success in school and apply better-coping strategies when faced with difficulties, at the same time, it helps them to control anxiety before exams (Seligman, 2011).

Anxiety before exams manifests itself as emotional arousal and accompanying changes in all areas of life for adolescents with low psychological resilience. The effect of anxiety before exams results in temporary or permanent changes in an adolescent's behavior. As anxiety is caused by subjective reasons related to the degree of psychological resilience of the adolescent, i.e., individual-psychological characteristics are related to the feeling of danger, its manifestation is accompanied by certain physiological symptoms like increased heart rate, fainting, shaking, nausea, sweating, etc. For example, adolescents with extreme perfectionism have significantly higher rates of depression, suicidal ideation, general anxiety, daily stress, social anxiety related to exams, procrastination, and social avoidance (Ringeisen & Buchwald, 2010).

Research has shown that in students with low psychological resilience, the significant increase in their duties and responsibilities at each stage of current formal education results in an increase in stress and anxiety levels, mainly exam-related anxiety (Hampel et al., 2008). This study's result shows a connection between test-related anxiety and the school satisfaction of adolescents. Adolescents with low test-related anxiety levels will have higher school satisfaction levels. The results of other studies have shown a significant correlation between students' satisfaction level with exam results and school satisfaction (Wach et al., 2016). A high level of exam-related anxiety causes adolescents to have low school satisfaction. Exam requirements motivate adolescents to work harder on the learning process. Research by Lee and Jang (2015) showed that exam-related anxiety is the main cause of all anxiety in teaching and learning facilities so it can affect student satisfaction in the learning process at school. When a high grade or failure to pass an exam is one of the most important factors in adolescents` anxiety (Jindal-Snape & Miller, 2008), researchers have found that exam-related anxiety increases over time, leading to lower school satisfaction (Whitaker Sena et al., 2007). School satisfaction is a cognitive assessment of the quality of students` school life (Varela et al., 2018). As explained above, there is a connection between exam-related anxiety and school satisfaction among adolescents. The less test anxiety adolescents have, the higher their school satisfaction will be. School satisfaction can be caused by several factors that exist around adolescents, one of which is their exam results. Thus, it can be concluded that low exam-related anxiety among adolescents can lead to their positive evaluation of the school. Adolescents` low psychological resilience leads to decreased learning motivation, which can increase exam-related anxiety and decrease academic performance and ability to express themselves in their educational and professional activities.

Conclusion

Thus, for the first time in Azerbaijan, with the research conducted in this direction with adolescents, the results regarding the school satisfaction, psychological resilience and exam-related anxiety of adolescents in Azerbaijan have been revealed. The results of our study support the hypotheses that exam-related anxiety mediates the association between psychological resilience and school satisfaction. In other words, there is a positive correlation between adolescents` psychological resilience and their school satisfaction but an inverse correlation between school satisfaction and exam-related anxiety. In other words, the higher the psychological resilience in adolescents, the lower their exam-related anxiety, which ultimately leads to increased school satisfaction.

Recommendations

Adolescents face stress as they make decisions about the future to pursue education appropriate to their interests and abilities, while also struggling to assert their identity. Their success in the exams, which is of interest to adolescents and individuals in the society in which they live, depends on many factors (Nederhand et al., 2020). School plays a critical role in shaping self-awareness and self-confidence in adolescents (Steinberg & Morris, 2001**).** It is of great importance that adolescents are accepted by other people in their school community and have respect and support from their peers, which, in turn, affects the level of school satisfaction. It is recommended to further examine the factors that might contribute to exam-related anxiety in high school students as well as in educational facilities all across the country.

Limitation

There were some limitations in the research we did. The first of these was that the research was carried out in Baku, the capital city of Azerbaijan, and the surrounding regions. Therefore, we cannot generalize the results to the adolescent population of the whole country. Further research should aim to be conducted in other regions of Azerbaijan. At the same time, there is another limitation that we should mention. Another limitation is that the scales used in the research process are self-reported, and the results could potentially be subject to self-report bias. In addition, the participants answered the questions on the scales used during the research online. No research team member accompanied them when they answered the questions to ensure they understood them correctly. This is another limitation of our research. In conclusion, due to cross-sectional design of the study we cannot infer a causal relationship between any two variables.

Authorship Contribution Statement

Rustamov: Conceptualization, design, analysis, writing, final approval, supervision. Aliyeva: Writing, data acquisition, data analysis / interpretation, statistical analysis, drafting manuscript. Nahmatova: Writing, critical revision of manuscript, statistical analysis. Asadov: Technical and material support. Mammadzada: Editing, reviewing, final approval.

References

Alam, M. (2001). *Academic achievement in relation to socio economic status, anxiety level and achievement motivation, a comparative study of Muslim and non-Muslim school children of Uttar Pradesh* [Unpublished doctoral dissertation]. Aligarh Muslim University.

Aliyev, B. H. (2019). İdrak fəallığında emosional yönəlişliyin əhəmiyyəti [The role of emotional direction in cognitive activity]. *Psixologiya Jurnalı, 2*, 3-15. https://bit.ly/3nny1ic

Baker, J. A., Dilly, L. J., Aupperlee, J. L., & Patil, S. A. (2003). The developmental context of school satisfaction: Schools as psychologically healthy environments. *School Psychology Quarterly, 18*(2), 206-221. https://doi.org/10.1521/scpq.18.2.206.21861

DeSantis King, A. L., Huebner, S., Suldo, S. M., & Valois, R. F. (2006). An ecological view of school satisfaction in adolescence: Linkages between social support and behavior problems. *Applied Research in Quality of Life, 1*, 279-295. https://doi.org/10.1007/s11482-007-9021-7

Driscoll, R. (2007). *Westside Test Anxiety Scale validation*. Education Resources Information Center. https://files.eric.ed.gov/fulltext/ED495968.pdf

Elmore, G. M., & Huebner, E. S. (2010). Adolescents' satisfaction with school experiences: Relationships with demographics, attachment relationships, and school engagement behavior. *Psychology in the Schools, 47*(6), 525-537. https://doi.org/10.1002/pits.20488

Hampel, P., Meier, M., & Kummel, U. (2008). School-based stress management training for adolescents: Longitudinal results from an experimental study. *Journal of Youth and Adolescence, 37*, 1009-1024. https://doi.org/10.1007/s10964-007-9204-4

Jindal-Snape, D., & Miller, D. J. (2008). A challenge of living? Understanding the psycho-social processes of the child during primary-secondary transition through resilience and self-esteem theories. *Educational Psychology Review, 20*, 217-236. https://doi.org/10.1007/s10648-008-9074-7

Labrague, L. J. (2021). Psychological resilience, coping behaviours and social support among health care workers during the COVID-19 pandemic: A systematic review of quantitative studies. *Journal of Nursing Management. 29*(7), 1893-1905. https://doi.org/10.1111/jonm.13336

Lee, J., & Jang, S. (2015). An exploration of stress and satisfaction in college students. *Services Marketing Quarterly, 36*(3), 245-260. https://doi.org/10.1080/15332969.2015.1046774

Lee, M., & Larson, R. (2000). The Korean 'examination hell': Long hours of studying, distress, and depression. *Journal of Youth and Adolescence, 29*, 249-271. https://doi.org/10.1023/a:1005160717081

Lotz, C., & Sparfeldt, J. R. (2017). Does test anxiety increase as the exam draws near? Students' state test anxiety recorded over the course of one semester. *Personality and Individual Differences 104,* 397–400. https://doi.org/10.1016/j.paid.2016.08.032

Miceli, M., & Castelfranchi, C. (2015). *Expectancy and emotion.* Oxford University Press.

Nederhand, M. L., Tabbers, H. K., Jongerling, J., & Rikers, R. M. J. P. (2020). Reflection on exam grades to improve calibration of secondary school students: A longitudinal study. *Metacognition and Learning, 15,* 291-317. https://doi.org/10.1007/s11409-020-09233-9

Persson, L., Haraldsson, K., & Hagquist, C. (2016). School satisfaction and social relations: Swedish schoolchildren's improvement suggestions. *International Journal of Public Health, 61*, 83-90. https://doi.org/10.1007/s00038-015-0696-5

Randolph, J. J., Kangas, M., & Ruokamo, H. (2009). The preliminary development of the Children's Overall Satisfaction with Schooling Scale (COSSS). *Child Indicators Research*, *2*, 79-93. https://doi.org/10.1007/s12187-008-9027-1

Ringeisen, T., & Buchwald, P. (2010). Test anxiety and positive and negative emotional states during an examination. *Cognition, Brain, Behavior: An Interdisciplinary Journal, 14*(4), 431–447.

Satici, S. A., Kayis, A. R., Satici, B., Griffiths, M. D., & Can, G. (2023). Resilience, hope, and subjective happiness among the Turkish population: Fear of COVID-19 as a mediator. *International Journal of Mental Health and Addiction, 21,* 803-818*.* https://doi.org/10.1007/s11469-020-00443-5

Seligman, M. E. P. (2011). Building resilience. *Harvard Business Review*, *89*(4), 100-106. https://hbr.org/2011/04/building-resilience

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The Brief Resilience Scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine, 15*, 194-200. https://doi.org/10.1080/10705500802222972

Smith, B. W., Tooley, E. M., Christopher, P. J., & Kay, V. S. (2010). Resilience as the ability to bounce back from stress: A neglected personal resource? *The Journal of Positive Psychology, 5*(3), 166-176. https://doi.org/10.1080/17439760.2010.482186

Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Annual Review of Psychology*, *52*, 83-110. https://doi.org/10.1146/annurev.psych.52.1.83

Steinmayr, R., Crede, J., McElvany, N., & Wirthwein, L. (2016). Subjective well-being, test anxiety, academic achievement: Testing for reciprocal effects. *Frontiers in Psychology*, *6*, Article 1994. https://doi.org/10.3389/fpsyg.2015.01994

Varela, J. J., Zimmerman, M. A., Ryan, A. M., Stoddard, S. A., Heinze, J. E., & Alfaro, J. (2018). Life satisfaction, school satisfaction, and school violence: A mediation analysis for Chilean adolescent victims and perpetrators. *Child Indicators Research, 11*, 487-505. https://doi.org/10.1007/s12187-016-9442-7

Verkuyten, M., & Thijs, J. (2002). School satisfaction of elementary school children: The role of performance, peer relations, ethnicity and gender. *Social Indicators Research, 59*, 203-228. https://doi.org/10.1023/A:1016279602893

Wach, F. S., Karbach, J., Ruffing, S., Brunken, R., & Spinath, F. M. (2016). University students' satisfaction with their academic studies: Personality and motivation matter. *Frontier in Psychology, 7*, Article 55. https://doi.org/10.3389/fpsyg.2016.00055

Whitaker Sena, J. D., Lowe, P. A., & Lee, S. W. (2007). Significant predictors of test anxiety among students with and without learning disabilities. *Journal of Learning Disabilities*, *40*(4), 360-376. https://doi.org/10.1177/00222194070400040601

Wong, P. T. P., Wong, L. C. J., & Scott, C. (2006). Beyond stress and coping: the positive psychology of transformation. In P. T. P. Wong & L. C. J. Wong (Eds.), *Handbook of multicultural perspectives on stress and coping. International and cultural psychology* (pp. 1-26). Springer. https://doi.org/10.1007/0-387-26238-5_1

Zhang, L., Zhu, J., Zhang, T., Jia, Q., Huia, L., Zhu, H., Tang, Y., & Wang, J. (2020). Comparative efficacy of add-on rTMS in treating the somatic and psychic anxiety symptoms of depression comorbid with anxiety in adolescents, adults, and elderly patients—A real-world clinical application. *Journal of Affective Disorders, 276,* 305–311. https://doi.org/10.1016/j.jad.2020.05.151