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ACADEMIC SELF-EFFICACY, ACADEMIC PROCRASTINATION, AND WELL-BEING: A MEDIATION MODEL WITH LARGE SAMPLE OF AZERBAIJAN

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Abstract

This study investigated the relationship between academic self-efficacy, academic procrastination, and well-being among Azerbaijani participants. The data was collected from 1657 participants who completed self-reported questionnaires measuring academic self-efficacy, academic procrastination, and well-being. The analyses of the study involved the use of correlation and structural equation modeling. The results of the structural equation modeling revealed that academic procrastination partially mediated the relationship between academic self-efficacy and well-being. The bootstrapping procedure also confirmed that the indirect effect of academic self-efficacy on well-being through academic procrastination was significant. Specifically, the data showed that higher levels of academic self-efficacy were associated with greater well-being, while higher levels of academic procrastination were associated with lower well-being. These findings add to the current understanding of the complex interplay between academic self-efficacy, procrastination, and well-being and may have important implications for interventions aimed at promoting academic success and well-being among students. Additionally, the study discusses the limitations and future research directions related to this topic.

Keywords: Academic self-efficacy, academic procrastination, wellbeing, Azerbaijan.

INTRODUCTION

Adolescence is a period of a transition from childhood to adulthood, requiring new psychological adaptations and characterized by dramatic changes in almost all aspects of an individual's life (Moksnes et al., 2014). Adolescence is characterized by rapid physical, emotional, social and cognitive changes (Kieling et al., 2011). Furthermore, individuals experience non-confirmation of their own physical development. While adolescents struggle to see themselves as capable of overcoming the anxiety, tension, and hopelessness, the physical inferiority they experience regarding their changing appearance contributes to decreased self-esteem (Aliyev, 2018; Satici, 2020). Adolescence is also a milestone when individuals discover their academic abilities and define their academic interests (Andretta & McKay, 2020). Dramatic changes and stress experienced at that period include increasing personal needs and demands, coping with parental and school requirements as well as with problems in interpersonal relationships (Byrne et al., 2007; Moksnes et al., 2010).

Mental health is characterized as mental well-being where a person can figure out their potential, overcome challenges, study efficiently and successfully and help society in various ways (Merlo & Vela, 2022; WHO, 2007). Well-being is defined as a condition in which individuals experience more positive feelings rather than negative ones and demonstrate sufficient life satisfaction (Diener, 2009). Accordingly, individuals who enjoy their interpersonal relationships, academic achievements, mental health, career, and personal life, tend to experience higher levels of subjective well-being (Myers & Diener, 1995; Ronen et al., 2016). Therefore, it is important to assist adolescents in developing successful coping skills, setting realistic and convincing expectations and being able to regulate them (Coskun et al., 2022). Higher levels of well-being are commonly associated with adolescents' academic achievements and their expectations at school (e.g., Shoshani et al., 2016; Tian et al., 2017). Simsaroğlu Beydola et al. (2022) found a significant negative correlation between hopelessness and wellbeing/life satisfaction in their recent study. Meanwhile, lower levels of well-being are more likely to present with self-destructive behavior, suicide attempts, and self-inflicted injuries (UNICEF, 2020).

Well-being refers to a person's emotional reactions and judgments about their life activity (Diener et al., 1999; Maker-Castro et al., 2022). Researchers have long conducted studies on well-being risk factors, including cultural, religious, economic, and social background. In these studies, they tried to determine major correlates of higher well-being, develop hypotheses, and put forward certain model proposals related to it. One of the main concepts related to individuals' levels of well-being is the concept of self-efficacy, defined by Bandura (1997). According to this concept, an individual with higher self-efficacy makes more effort to overcome difficulties and exhibits better resilience (Bandura, 1997). In this regard, self-efficacy allows individuals to interpret potentially threatening difficulties as manageable, reduce anxiety and negative thinking and positively regulate their emotional state (Carr, 2016), thus increasing well-being.

Academic self-efficacy is expressed as the perception of the abilities and qualities that guide individuals' determination to achieve success and educational goals (Sirois, 2004). Direct and indirect experience, social cues, and physical and emotional states are the main elements that make up self-efficacy. Individuals with high academic self-efficacy believe they can overcome difficulties, work hard, and persevere to achieve their goals. By setting challenging goals, they expect their efforts to yield positive results. They attribute failure not to the lack of talent or intelligence, but to the lack of effort or unforeseen external circumstances. Students with high academic self-efficacy are goal-oriented and are more actively involved in the learning process (Bandura, 1997). These qualities enable them to achieve success in school life, which respectively leads to an increase in academic self-efficacy and well-being (Pajares, 1996; Hampton, 2004).

People with high academic self-efficacy have self-confidence in that subject, and this confidence is reflected in their behavior. People with low self-efficacy may exaggerate problems and believe they are more difficult than they really are. This also increases stress and depression and narrows the problem-solving perspective. On the other hand, high self-efficacy allows a person to approach

difficult tasks and activities more comfortably (Pajares, 1996). Consequently, it can be said that individuals' self-efficacy is a predictor of wellbeing.

Research suggests that academic procrastination may play a mediating role in the relationship between academic self-efficacy and well-being. Procrastination is defined as the conscious delay in the time of behavior that a person is responsible for (Hill et al., 2022; Solomon & Rothblum, 1984). More specifically, procrastination behavior can be defined as the behavior of postponing an important task that an individual has the potential to do and has decided to do in advance, without a logical reason (Grecco, 1984). Studies on the prevalence of student procrastination confirm that a significant proportion of students develop procrastination behavior, such as doing homework, preparing for exams, or completing assignments at the end of the semester or the last minute (Solomon & Rothblum, 1984). Academic tasks are postponed in favor of activities which make people feel well such as spending time on the Internet, watching TV, sleeping, meeting friends, and relatives (Thibodeau, & Blunt, 2000; Solomon & Rothblum, 1984). In various literature studies, academic procrastination behavior; ineffective study strategies (Chissom & Iran-Nejad, 1992), low grade point average, difficulty completing homework, unplanned study habits (Martín-Puga et al., 2022; Senecél et al., 1995), unrealistic excuses, anxiety, fear of failure, depression, irrational thinking, low self-confidence (Ferrari et al., 1995; Solomon & Rothblum, 1984).

One of the positive effects of academic self-efficacy is its influence on academic procrastination. Haycock, McCarthy, and Sky (1998) reported that individuals with academic self-efficacy were less likely to procrastinate. Ferrari, Parker, and Ware (1992) similarly found that better academic self-efficacy predicted lower academic procrastination. Klassen, Krawchuk, and Rajani (2008) concluded that students with academic self-efficacy have lower procrastination tendencies.

Procrastination resulting from low academic self-efficacy can be a major barrier, leading to school-related problems (e.g., low grades) and stress-related physical discomfort (Solomon & Rothblum, 1984; Tice & Baumeister, 1997; Johnson et al., 2000; Pychyl & Shanahan, 2007). It may even lead to dropping out of school (Knaus, 1998). As İra and Yalçın (2015) emphasized, while schools face their own set of challenges, it is important for managers and teachers to be aware of external developments and renew themselves constantly to find suitable solutions to school-related problems. Also, according to the results of the conducted research, this study aims to reveal the relationship between academic self-efficacy and well-being of adolescents and to determine whether procrastination has a mediating effect on this association. Therefore, the study aims to achieve several sub-objectives, including (1) examining the association between academic self-efficacy and well-being, (2) determining the relationship among academic self-efficacy, burnout, and well-being, (3) investigating the level of procrastination among adolescents, and (5) determining whether procrastination has a mediating effect on the relationship between academic self-efficacy and well-being. By addressing these sub-objectives, the study aims to provide a comprehensive understanding of the factors influencing the well-being and to offer practical recommendations for enhancing their academic self-efficacy and reducing procrastination.

METHOD

Model of the Research

The study employed a correlational research design. Within this design, a structural equation modeling technique was utilized to test the mediation model examining the relationship between academic self-efficacy, academic procrastination, and well-being in a large sample of Azerbaijani students.

Participants and Procedure

A process of convenience sampling in different schools of Baku was used in this study. The sample consisted of 1657 participants, among which 943 (56.9%) females and 714 (43.1%) males. Half of the participants are satisfied with their relationships with their peers (64.7%). A similar ratio is also valid for relations with teachers (satisfied = 64.6%, partially satisfied = 29.0%, not satisfied = 6.5%). Data

was collected online only from volunteer adolescents. The Helsinki Declaration was taken into consideration and the research approval was given by the Psychology Scientific Research Institute Ethics Committee (Number: T-230).

Measures

The Tuckman Procrastination Scale was designed to assess individual procrastination types (Tuckman, 1991). The measurement tool was composed of 16 items (e.g. "I procrastinate unnecessarily on finishing things, even if they are important") rated on a 4-point Likert scale from 1 "Strongly disagree" to 4 "Strongly agree". This scale has a single factor construction with a loading of .40 or higher and reliability coefficient α = .89. In the present study, Cronbach's alpha coefficient measured .83.

The Academic Self-efficacy Scale was designed by Jerusalem and Schwarzer (1981) to determine adolescents' sense of academic self-efficacy. The scale consists of seven items (e.g. "I know very well what I have to do to get a high grade"). Items are rated on a 5-point Likert-type (from 1 "True for me" to 5 "False for me"). In the present study, Cronbach's alpha coefficient measured .70.

The Adolescent Subjective Well-Being Scale was developed to determine the level of well-being of adolescents. There were four factors which are known as "satisfaction with family relationships", "satisfaction with significant others' relationships", "life satisfaction", and "positive feelings", explaining 61.64 % of the scale variance, which consisted of 15 items (e.g. "I am usually smiling") (Eryilmaz, 2009). The internal consistency for the scale was α = .86. In the present study, Cronbach's alpha coefficient is .88.

Data analysis

The statistical analysis was conducted using IBM SPSS Statistics 22 and AMOS Graphics. Descriptive statistics were computed. Then, Pearson's correlation analyses were conducted to test the correlations among the study variables. Structural equation modeling (SEM) was employed to examine the relationship between academic self-efficacy and adolescents' wellbeing, as well as the mediating role of academic procrastination. The model fit was estimated with several fit indices, as recommended by Hu and Bentler (1999): χ^2/df ratio (value should be < 5.0), SRMR and RMSEA (values should be < 0.08), CFI, GFI, IFI, and TLI (values should be > 0.90). The accepted level of significance in the study is .05. ....

RESULTS

Descriptive statistics as well as Pearson correlations of all study variables are presented in Table 1. Academic self-efficacy was positively correlated with wellbeing (r = .376, p<.001) and negatively correlated with academic procrastination (r = -.340, p<.001). Wellbeing was negatively correlated with academic procrastination (r = -.419, p<.001).

Table 1. Descriptive Statistics and Correlations among Study Variables (N = 1657)

Variable	Academic self-efficacy	Academic procrastination	Wellbeing
Academic self-efficacy	–		
Academic procrastination	-.340**	–	
Wellbeing	.376**	-.419**	–
Mean	19.48	38.03	52.67
Standard deviation	3.13	8.34	7.02
Skewness	-.679	-.106	-1.32
Kurtosis	.607	-.586	1.67

** p < .001

Measurement Model

Firstly, a measurement model was examined with three latent variables (academic self-efficacy, academic procrastination, and wellbeing) and nine observed variables. The fit indices of the measurement model were as follows $\chi^2_{(24,\ 1657)}$=116.80, p<.001; χ^2/df=4.86; CFI=.982; GFI=.985;

IFI=.982; TLI=.973; SRMR=.0292; RMSEA=.048 C.I. [.040, .057]. All standardized factor loadings were significant ranged from .613 to .880 (*ps*<.001).

Structural Model

We assessed the mediating role of academic procrastination on the relationship between academic self-efficacy and adolescent wellbeing after controlling for gender and age (see Figure 1). According to the goodness of fit indices, the results revealed that hypothesized mediation model had an acceptable fit $\chi^2_{(37,\ 1657)}$=146.37, *p*<.001; χ^2/df=3.95; CFI=.979; GFI=.985; IFI=.979; TLI=.969; SRMR=.0276; RMSEA=.042 C.I. [.035, .050]. The direct effect of academic self-efficacy on academic procrastination was significant (*β*=-.460, *p*<.001). In addition, the direct effect of academic procrastination on wellbeing was also significant (*β*=-.322, *p*<.001). To investigate the indirect effects for significance, we used a bootstrapping procedure with 5000 bootstrap resamples conducted on the mediation model. Bootstrapping procedure indicated that the relation between academic self-efficacy and wellbeing was partially mediated by academic procrastination (indirect effect=.148, 95% CI=.119, .184).

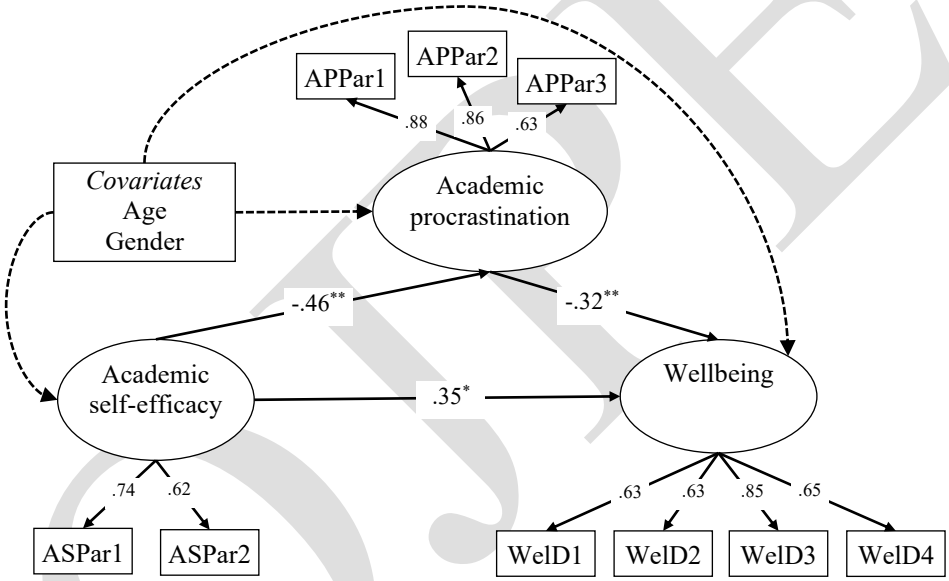

Figure 1. Standardized Parameter Estimates for the Mediated Model. ** *p* < .01

DISCUSSION, CONCLUSION, and SUGGESTIONS

Well-being is a state in which people experience more positive than negative emotions and are satisfied with their lives (Diener et al., 1999). As well-being is an important part of quality of life, measuring it is crucial to understand how people improve their lives. For example, the mental health, personal development, communication with others, and academic achievements of a teenager with high well-being are significantly improved by the positive influence of teachers and staff within the education system (Fasola & Osisanya, 2022; Palak & İra, 2022). The results of this study confirmed our hypotheses that academic procrastination mediates the relationship between academic self-efficacy and adolescent well-being.

Academic self-efficacy in our study was negatively associated with procrastination behavior. A review of the literature appears to have similar research findings. Chemers, Hu, and Garcia (2001) stated that adolescents with high academic self-efficacy make more use of mental methods useful for learning, managing their time and learning situations more effectively, and are better at controlling and regulating their efforts. Bandura argued that high self-efficacy positively influences task initiation and persistence, while low self-efficacy results in avoidance of productivity and less persistence. Remorse, guilt, fear, anxiety and stress that emerge in adolescents as a result of failure to fulfill

academic tasks and the negative perception of their potential are related to the decline in their well-being (Glick et al., 2014; Pychyl et al., 2000; Steel, 2002). In other words, college students who postpone academic work and responsibilities are struggling with poor mental health. In addition, this may be because individuals with higher academic self-efficacy have more confidence in their ability to perform well academically, and therefore may be less likely to avoid tasks or engage in procrastination behaviors. Additionally, individuals with higher academic self-efficacy may have more effective strategies for managing their time and learning situations, which can lead to increased productivity and a reduced likelihood of procrastination.

Research has shown that adolescents' well-being is directly influenced by academic procrastination. There is a negative correlation between academic procrastination and adolescents' well-being (Savithri, 2014; Sawitri & Ariati, 2011; Tamini et al., 2013). Correspondingly, the low levels of adolescent's well-being is induced by stress factors, which is triggered by demonstrating academic procrastination tendencies and avoiding executing academic duties (Wright et al., 2017, Çelik & Odaci, 2020). Further results indicated that common negative feelings which emerge in adolescents such as remorse, guilt, fear, anxiety, and stress are related to the decline in their well-being because of postponement of required actions to fulfill academic tasks and the negative perception of their potential. (Glick et al., 2014; Pychyl et al., 2000; Steel, 2002). Academic procrastination can lead to negative outcomes such as decreased academic performance, increased stress and anxiety, and decreased well-being. When students procrastinate, they may not have enough time to complete their tasks properly, leading to rushed and lower-quality work. Additionally, the stress and anxiety caused by procrastination can have a negative impact on their mental health and overall well-being. Therefore, academic procrastination is generally considered to be harmful and can have a significant impact on students' academic and personal lives.

The findings indicate that procrastination played a mediating role in the relationship between self-efficacy and well-being. In other words, study confirmed that adolescent's well-being is both indirectly and directly affected by self-efficacy. Well-being is directly influenced through the mediating role of procrastination. According to similar research, adolescents who have a high level of self-efficacy believe in their abilities to take action to complete academic tasks take their responsibilities and duties and consequently get high well-being (Pychyl & Little, 1998). In addition, there is an inversely proportional relationship between procrastination and well-being. Moreover, low levels of self-efficacy compose more negative expectations in adolescents about their future, decrease their life satisfactions and eventually lead to weakened well-being (Caprara et al., 2006). From this aspect, a positive relationship was defined between adolescents' self-efficacy and well-being through mediating role of procrastination.

Limitation

This study has some limitations which are essential to be wary when evaluating the research. Firstly, the fact that the research is oriented and sensitive age groups are considered, the risks of random analysis were possible in the questionnaire survey of the research. There were some limitations in our research, as in every research. The second limitation of our study was that the research was mainly conducted among adolescents living in the capital city Baku and the adjoining Absheron Peninsula, which limits the generalizability of the study. The research did not cover other cities and towns, it was not possible to fully state the accuracy of the results. If the research was also conducted in remote areas, it is not known what the differences we will get in the results. Another limitation is that the study only covers the psychometric characteristics of adolescents, their educational life, academic autonomy, persistence, and psychological well-being; it cannot be generalized to other age groups. However, this study generalized the main problematic age periods of educational life. In future research, a comprehensive solution to these problems can be discovered.

Implications

The findings of this study have important implications for educational institutions and policymakers. First, promoting academic self-efficacy among students should be a priority. By enhancing students'

belief in their own capabilities to succeed academically, schools can contribute to improved academic performance and reduced academic procrastination. This can be achieved through interventions such as targeted support programs, mentoring initiatives, and promoting a growth mindset. Second, fostering student well-being should be integrated into the education system. Recognizing the intricate relationship between well-being and academic outcomes, schools should implement strategies that prioritize the physical, emotional, and social well-being of students. This can be accomplished through the provision of comprehensive support services, promoting positive school climate, and fostering healthy coping mechanisms.

Conclusion

This was the pioneer study in Azerbaijan assessing the association between self-efficacy, academic procrastination, and mental well-being in relation to the educational process. Although this study ensures data about the relationship between academic self-efficacy, procrastination and well-being, some suggestions can be made to researchers and practitioners.

Suggestions for researchers

Conducting longitudinal studies to further examine the relationship between self-efficacy, academic procrastination, and mental well-being in Azerbaijan would be useful in understanding the long-term effects of these factors. In addition, it would be beneficial for future research to investigate the impact of various factors, such as personality traits, cultural background, and family dynamics, on adolescents' well-being.

Suggestions for practitioners

Educational facilities in Azerbaijan should implement well-being programs to reduce the rate of academic procrastination among students. In addition, school counselors and mental health care professionals can develop intervention programs, such as psychotherapy groups or group counseling, to help students struggling with poor self-efficacy and poor mental well-being. Research can be conducted to evaluate the effectiveness of these programs. Practitioners should also consider the cultural context of Azerbaijan and its potential influence on academic procrastination and mental well-being.

Ethics and Conflict of Interest

The research was conducted following the guidelines stated in the Helsinki Declaration. This study received approval from the Ethics Committee of the Psychology Scientific Research Institute (Number: T-230). No conflict of interest exists for this manuscript for any of the researchers.

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