Journal of Positive Psychology & Wellbeing
2024, Vol. 8, No. 3, 1 – 12
http://journalppw.com
ISSN 2587-0130

Analysis of the Effect of Emotional Variables on the Practice of Physical Activity in Teacher Education Trainees- An Explanatory Model

Manuel Ortega-Caballero[1], José Manuel Alonso-Vargas[2], Eduardo Melguizo-Ibáñez[2*] and Iván Ortega-Caballero[3]

[1]*Department of Pedagogy. University of Granada.*
[2]*Department of Didactics of Musical, Plastic and Corporal Expression. University of Granada.*
[3]*International University of Valencia*
Email: emelguizo@ugr.es

Abstract

Today, physical inactivity is a global problem. Regular physical activity has been shown to be beneficial for individuals. There are gender differences in physical activity levels during the adolescent period. If the physical profile is not adequately addressed, sedentary lifestyles can be created. The aims of the study are (a) to fit a theoretical explanatory model of the variables resilience and negative emotional states on the practice of physical activity and (b) to study the differences in the effects according to the sex of the participants. A cross-sectional and exploratory study is presented. The sample consisted of 717 university students (23.21±6.85). The gender distribution is homogeneous, with 60.8% female and 39.2% male. The following instruments were used for data collection: Self-prepared questionnaire, Trait Meta Mood Scale, Connor-Davidson Resilience Scale and Depression, Anxiety and Stress Scale-21. The data show that there are gender differences in the effect of resilience and negative emotional states on physical activity and emotional intelligence. In conclusion, it highlights the need to take gender differences into account in order to reduce levels of physical inactivity. Gender differences should also be taken into account in order to adequately manage anxiety, stress, depression and resilience.

Keywords*:* Resilience, Anxiety, Depression, Stress, Physical Activity, Gender.

1. Introduction

The dissertation on resilience has evolved significantly from its origin in the mid-20th century to the present day. The diversity of definitions proposed by various authors reflects the complexity and depth of the term. Resilience, according to Smith and Hays (2020), can be interpreted as post-traumatic growth, understood as the capacity of an individual to overcome an adverse experience, learn from it and improve as a result. García and López (2021) define resilience as a coping process that allows individuals to recover from adversity, which differentiates it from the concept of post-traumatic growth proposed by other authors (Fernández and Martínez, 2022; Smith and Hays, 2020).

This analysis is based on the findings of various research studies (Fernández-Alonso et al., 2024). Resilience as the ability to overcome emotional pain or difficult experiences (Fernández-Alonso et al., 2024). It can manifest itself in responses to various difficult situations, such as the loss of a loved one, physical or

mental abuse (Fernández-Alonso et al., 2024). Any of these situations can trigger biological, psychological or social factors that contribute to resilience (Ortega and Saavedra, 2014).

Studies emphasise the relevance of possessing a sufficient level of resilience in circumstances of adversity is crucial, as corroborated by influential research (Mahdiani and Ungar, 2021). Such research suggests that individuals with a high degree of resilience have a lower incidence of stress-related illnesses, as well as greater physical health (Joyce et al., 2018). Furthermore, it has been observed that resilience can mitigate, to some degree, the impact of psychological stress (Joyce et al., (2018).

The interconnectedness between three key factors - emotional intelligence, resilience and life satisfaction - has also been explored in depth (Melguizo-Ibáñez et al., 2022; Melguizo-Ibáñez et al., 2023). Studies have shown that these variables are not only closely related to each other, but also play a crucial role in the overall well-being of university students and future professionals (Cejudo et al., 2016).

Emotional intelligence and resilience are key factors that influence the life satisfaction of university students (Cejudo et al., 2016). These elements and their interaction can affect the quality of life and well-being of students in the academic environment (Cejudo et al., 2016). Therefore, a significant contribution to the field of student well-being is vital to better understand how emotional intelligence and resilience influence our students, depending on gender, educational, sporting or other backgrounds (Miranda et al., 2023).

Recent studies reveal that stress loads, both life and interpersonal, play a significant role in the onset of depressive and anxiety symptoms in university students (Melguizo-Ibáñez et al., 2023). These findings underscore the need to seek mechanisms to identify students at risk for early intervention. Importantly, early interventions may include stress management programmes, cognitive behavioural therapy, and on-campus counselling services. In addition, the promotion of healthy lifestyles, such as a balanced diet, regular exercise, and sufficient sleep, may also be beneficial (Londoño et al., 2021; Zúñiga-Coronado et al., 2021).

Studies have shown that students who possess a high degree of emotional intelligence tend to experience fewer physical-emotional symptoms (Acebes-Sánchez et al., 2019). This can be attributed to their ability to effectively manage stress and negative emotions. In addition, these students also tend to experience less social anxiety and depression (Acebes-Sánchez et al., 2019). Emotional intelligence enables them to understand and manage their own emotions as well as those of others, which can reduce feelings of anxiety in social situations and help prevent depression (Servín et al., 2021). Emotional intelligence appears to play a key role in personal mental health and teaching practice. Professionals with high emotional intelligence can manage stress more effectively, work well in teams and have better relationships with colleagues and students (Sen et al., 2020).

The practice of physical activity carried out in a weighted manner has benefits in reducing the levels of depression in young university students. It allows them to create spaces of well-being and increase their quality of life (Hoyos and Bernal, 2021). In studies with more than a thousand university students who do not engage in adequate physical activity, their prevalence rates of anxiety and depression are usually significantly higher than those students who do (Melguizo-Ibáñez et al., 2022; Ming-Qiang et al., 2020).

Low levels of physical activity and unhealthy behaviour among young adults and university students are a cause for concern (Acebes-Sánchez et al., 2019). This phenomenon is alarming as it can lead to significant socio-health and psychosocial problems (Servin et al., 2021; Melguizo-Ibáñez et al., 2022). These problems can manifest themselves in the form of chronic diseases, mental disorders and reduced quality of life (Marfil-Carmona et al., 2021). In addition, the lack of physical activity and healthy lifestyle habits among this age group can have a negative impact on their

academic performance and general well-being. It is crucial to implement effective strategies to increase physical activity and promote healthy lifestyles in this population (Marfil-Carmona et al., 2021).

This study has the following objectives: (a) to adjust a theoretical explanatory model of the variables resilience and negative emotional states on the practice of physical activity and (b) to study the differences in the effects according to the sex of the participants.

2. Material and Methods

Design and sample of the study

A non-experimental (ex post facto), cross-sectional, exploratory study is presented. The sample consisted of 717 university students (23.21±6.85). A sampling error of less than 5.0% was obtained, so the sample obtained for this research is representative. The gender distribution shows a higher participation of women (60.8%; n=436) compared to men (39.2%; n=281).

Instruments and variables

Self-prepared questionnaire: This was used to collect variables such as sex (male/female) and age. For the variables aimed at the physical sporting sphere, questions on compliance with the physical activity recommended by the WHO (2020) were used. This variable was categorised into the following levels: less than 150 min, between 150 and 300 min and more than 300 min per week (Melguizo-Ibáñez et al., 2022). This criterion was used to determine whether young people were physically active or not (Arufe-Giráldez et al., 2019).

Trait Meta Mood Scale (TMMS_24) (Salovey et al., 1995): Although the version by Salovey et al. (1995) was not used, the version adapted to Spanish by Fernández-Berrocal et al. (2004) was used. The instrument consists of 24 items that assess emotional intelligence according to three variables: emotional attention (α=0.836), emotional clarity (α=0.904) and emotional repair (α=0.865).

Connor-Davidson Resilience Scale (CD-RISC) (Connor and Davidson, 2003): The Crespo et al. (2014) version was used for this research. The scale assesses resilience in terms of five variables: persistence/tenacity/self-efficacy (α=0.854), control under pressure (α=0.826), adaptability and support networks (α=0.763), control and purpose (α=0.798) and spirituality (α=0.814).

Depression, Anxiety and Stress Scale-21 (DASS-21) (Lovibond and Lovibond, 1995): For this study the version of Daza et al. (2002) was used. Through 21 items the instrument offers data related to three subscales: Anxiety (α=0.916), depression (α=0.917) and stress (α=0.907).

Procedure

Before starting data collection, a systematic search was carried out. This review revealed a number of instruments used for data collection. Those with the highest internal consistency were selected. Subsequently, the questionnaire for data collection was created. This was created on the Google Forms platform. After this, the research was advertised on various social networks, inviting young people who were on undergraduate or postgraduate courses to participate. Before being given access to the questionnaire, they were informed of their rights as participants, and agreed to participate once they had given their informed consent. They were also assured that their data would be processed for scientific purposes and under an anonymous profile. All these steps are included in the Declaration of Helsinki. Finally, the research was approved and supervised by an ethics committee of the University of Granada (2966/CEIH/2022).

Data Analysis

The IBM SPSS Amos 23.0 program (IBM Corp., Armonk, NY, USA) was used to develop and obtain an adequate fit of the theoretical structural equation model. The proposed model (figure 1) is made up of 15 variables. According to Ruiz et al. (2010) there are two types of variables. Endogenous variables are those that receive the effect of other variables (Ruiz et al., 2010). Exogenous variables are

those that exert an effect on endogenous variables (Ruiz et al., 2010). The model consists of 13 endogenous variables (SPR, CP, ADP, CUP, PER, ANX, STR, DPR, PA, EA, EC, ER, EI) and 2 exogenous variables (RES, NE). Due to the characteristics of the endogenous variables, causal explanations have been made based on the associations obtained between the indicators and the degree of reliability of the measurement process (Ruiz et al., 2010). This has made it possible to include measurement error (Ruiz et al., 2010).

Regarding the direction of the effects, it is worth noting that these are symbolised by arrows (Ruiz et al., 2010). Unidirectional arrows represented lines of influence between latent variables and were interpreted from multivariate regression coefficients. In contrast, bidirectional arrows are interpreted as a reciprocal effect between both variables. The level of significance was studied using Pearson's Chi-Square test, and significant differences were found when $p < 0.05$.

The theoretical model proposed (figure 1) presents a mediating model of the effect of negative emotional states and resilience on emotional intelligence through the practice of weekly physical activity. Likewise, a multi-group model has been presented according to the sex of the participants. A reciprocal effect between negative emotional states and resilience is highlighted, while the rest of the effects are unidirectional.

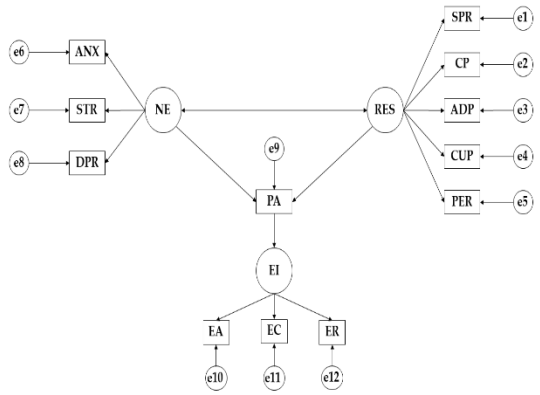

Figure 1. Theoretical structural equation model

Note: Anxiety (ANX); Stress (STR); Depression (DPR); Negative Emotional States (NE); Emotional Intelligence (EI); Emotional Attention (EA); Emotional Clarity (EC); Emotional Repair (ER); Resilience (RES); Self-Efficacy (PER); Control Under Pressure (CUP); Adaptability and Support Networks (ADP); Control and Purpose (CP); Spirituality (SPR).

Once the theoretical model was estimated, the fit was assessed. There are different fit indices, but the most commonly used are absolute fit and comparative fit (Ruiz et al., 2010). Of the absolute fit indices, the Chi-square/degrees of freedom (χ^2/gl) is the most common, however it is very sensitive to sample size (Hu and Bentler, 1999). Values below five indicate a good fit (Hu and Bentler, 1999).

For comparative fit indices the most commonly used are the comparative goodness-of-fit index (CFI), Tucker Lewis index (TLI), normalised fit index (NFI), goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI). The values of these indices should be higher than 0.900 to show a good fit (Hu and Bentler, 1999). It is also advisable to use other fit indices such as the root mean squared residuals of approximation (RMSEA). For this, values should be lower than 0.100 (Maydeu-Olivares, 2017; Kyriazos, 2018).

Table 1 below presents the values obtained for ‘the fit indices consulted:

Table 1. Values of the fit indices obtained

CFI	TLI	NFI	GFI	AGFI	RMSEA
0.973	0.951	0.964	0.935	0.940	0.071

3. Results

Table 2 shows the causal relationships of the variables for the sample of this study. For the university population, a positive causal relationship of negative emotional states on the practice of physical activity is observed (β=0.082; $p < 0.05$). A positive effect of the practice of physical activity on emotional intelligence is obtained (β=0.995). A negative effect of resilience on physical activity practice is evident (β=-0.041). Continuing with the effect of resilience on the sub-variables that

make up this variable, a positive effect is obtained for Self-efficacy (β=0.386; p < 0.05) Control under pressure (β=0.801; p < 0.05); Adaptability and support networks (β=0.814; p < 0.05) Control and purpose (β=0.806; p < 0.05) and Spirituality (β=0.877; p < 0.05). Positive causal relationships of negative emotional states on depression (β=0.870), stress (β=0.897; p < 0.05) and anxiety (β=0.911; p < 0.05) are also obtained. A positive effect of emotional intelligence on emotional repair (β=0.001), emotional clarity (β=0.023; p < 0.05) and emotional attention (β=0.042; p < 0.05) is presented. Finally, a negative reciprocal effect is obtained between resilience and negative emotional states (β=-0.268; p < 0.05).

Table 2. Standardised regression weights for the total sample

Effect Direction	**Regression Weights**				**Standardised Regression Weights**
	Estimate	**Error**	**Critical radio**	***p***	**Estimation**
PA ←NE	0.055	0.027	2.019	< 0.05	0.082
PA ←RES	−0.032	0.032	−1.001	0.317	−0.041
EI ←PA	0.001	0.058	0.019	0.958	0.995
SPR ←RES	1.000				0.877
CP ←RES	0.869	0.033	26.195	< 0.05	0.806
ADP ←RES	0.951	0.036	26.581	< 0.05	0.814
CUP ←RES	1.087	0.042	25.939	< 0.05	0.801
PER ←RES	0.612	0.059	10.303	< 0.05	0.386
DPR ←NE	1.000				0.870
STR ←NE	0.920	0.028	32.433	< 0.05	0.897
ANX ←NE	1.038	0.031	33.105	< 0.05	0.911
ER ←EI	1.000				0.001
EC ←EI	30.466	0.066	0.019	< 0.05	0.023
EA ←EI	55.354	0.025	0.019	< 0.05	0.042
EN ← → RES	−0.125	0.020	−6.265	< 0.05	−0.268

Note: Anxiety (ANX); Stress (STR); Depression (DPR); Negative Emotional States (NE); Emotional Intelligence (EI); Emotional Attention (EA); Emotional Clarity (EC); Emotional Repair (ER); Resilience (RES); Self-Efficacy (PER); Control Under Pressure (CUP); Adaptability and Support Networks (ADP); Control and Purpose (CP); Spirituality (SPR).

Table 3 presents the standardised regression weights for the male population. A positive effect of negative emotional states on physical activity (β=0.048) is observed. In contrast, a negative effect of resilience on physical activity practice is observed (β=-0.061). A negative effect of physical activity on emotional intelligence is also observed (β=-0.993). The effect of resilience on the sub-variables that make up this variable is positive for Self-efficacy (β=0.316; p < 0.05) Control under pressure (β=0.769; p < 0.05); Adaptability and support networks (β=0.748; p < 0.05) Control and purpose (β=0.800; p < 0.05) and Spirituality (β=0.856). Positive causal relationships are obtained for negative emotional states on depression (β=0.857), stress (β=0.899; p < 0.05) and anxiety (β=0.915; p < 0.05). A positive causal relationship of emotional intelligence on emotional repair (β=0.085), emotional clarity (β=0.029; p < 0.05) and emotional attention (β=0.020; p < 0.05) is presented. Finally, a negative reciprocal effect is obtained between resilience and negative emotional states (β=-0.238; p < 0.05).

Table 3. Standardised regression weights for male population

Effect Direction	Regression Weights				Standardised Regression Weights
	Estimate	Error	Critical radio	*p*	Estimation
PA ←NE	0.027	0.036	0.746	0.456	0.048
PA ←RES	−0.042	0.045	−0.932	0.351	−0.061
EI ←PA	−0.161	0.113	−1.428	0.153	−0.993
SPR ←RES	1.000				0.856
CP ←RES	0.886	0.059	15.029	< 0.05	0.800
ADP ←RES	0.928	0.067	13.807	< 0.05	0.748
CUP ←RES	1.082	0.076	14.314	< 0.05	0.769
PER ←RES	0.535	0.105	5.108	< 0.05	0.316
DPR ←NE	1.000				0.857
STR ←NE	0.951	0.048	19.793	< 0.05	0.899
ANX ←NE	1.091	0.054	20.192	< 0.05	0.915
ER ←EI	1.000				0.085
EC ←EI	0.328	0.708	0.463	< 0.05	0.029
EA ←EI	0.226	0.691	0.326	< 0.05	0.020
EN ← → RES	−0.098	0.028	−3.469	< 0.05	−0.238

Note: Anxiety (ANX); Stress (STR); Depression (DPR); Negative Emotional States (NE); Emotional Intelligence (EI); Emotional Attention (EA); Emotional Clarity (EC); Emotional Repair (ER); Resilience (RES); Self-Efficacy (PER); Control Under Pressure (CUP); Adaptability and Support Networks (ADP); Control and Purpose (CP); Spirituality (SPR).

Table 4 presents the standardised regression weights for the female population. A positive causal relationship of negative emotional states on physical activity practice is observed (β=0.069). A positive effect of physical activity on emotional intelligence is also observed (β=0.994). On the contrary, a negative effect of resilience on physical activity practice is obtained (β=-0.050). The effect of resilience on the sub-variables that make up this variable is positive for Self-efficacy (β=0.886; $p < 0.05$) Control under pressure (β=0.821; $p < 0.05$); Adaptability and support networks (β=0.851; $p < 0.05$) Control and purpose (β=0.808; $p < 0.05$) and Spirituality (β=0.886). Positive causal relationships are obtained for negative emotional states on depression (β=0.878), stress (β=0.894; $p < 0.05$) and anxiety (β=0.909; $p < 0.05$). A positive causal relationship of emotional intelligence on emotional repair (β=0.001), emotional clarity (β=0.017; $p < 0.05$) and emotional attention (β=0.032; $p < 0.05$) is presented. Finally, a negative reciprocal effect is obtained between resilience and negative emotional states (β=-0.289; $p < 0.05$).

Table 4. Standardised regression weights for female population

Effect Direction	Regression Weights				Standardised Regression Weights
	Estimate	Error	Critical radio	*p*	Estimation
PA ←NE	0.046	0.035	1.314	0.189	0.069
PA ←RES	− 0.037	0.039	− 0.944	0.345	− 0.050
EI ←PA	0.001	0.073	0.017	0.986	0.994
SPR ←RES	1.000				0.886
CP ←RES	0.862	0.040	21.276	< 0.05	0.808
ADP ←RES	0.965	0.042	23.176	< 0.05	0.851
CUP ←RES	1.096	0.050	21.834	< 0.05	0.821
PER ←RES	0.650	0.072	9.045	< 0.05	0.426
DPR ←NE	1.000				0.878

STR ←NE	0.900	0.035	25.606	< 0.05	0.894
ANX ←NE	1.006	0.038	26.184	< 0.05	0.909
ER ←EI	1.000				0.001
EC ←EI	0.987	0.025	0.017	< 0.05	0.017
EA ←EI	0.128	0.029	0.017	< 0.05	0.032
EN ← → RES	− 0.143	0.027	− 5.273	< 0.05	− 0.289

Note: Anxiety (ANX); Stress (STR); Depression (DPR); Negative Emotional States (NE); Emotional Intelligence (EI); Emotional Attention (EA); Emotional Clarity (EC); Emotional Repair (ER); Resilience (RES); Self-Efficacy (PER); Control Under Pressure (CUP); Adaptability and Support Networks (ADP); Control and Purpose (CP); Spirituality (SPR).

4. Discussion

In the research, the sample composed of male and female university students, highlighting the results of males who practice more physical activity show higher levels of resilience, keep more in their work and have greater self-control under different pressures (Arida and Teixeira-Machado, 2021). A lower effect of negative emotional states is also noted by male university students who are physically active (Wang et al., 2020).

Based on the female university sample, it stands out that female students are less physically active and in correlation develop more negative emotional states (Zou et al., 2023). The analysis and results show an inverse relationship between the negative emotions of university students and their resilience to cope with situations (Ke et al., 2022). It also emerges from the research that higher values of resilience data are positively correlated with higher self-sufficiency in resolving various situations (Daemen et al., 2021). Furthermore, physical activity correlates inversely with negative emotions (San Román-Mata et al., 2020).

Regarding the practice of physical activity, research relates greater and better emotional intelligence to greater exercise practice (Valverde-Janer et al. 2023). This assertion that exercise must be given for health improvement and health benefits is only possible for health benefits when specific volumes or intensities of physical activity are achieved on an individualised basis. This perspective, although widely accepted, may limit the adaptive possibilities of each individual, as it insists on a single pathway to achieving improvements in physical health, practice with personal nuances (Warburton and Bredin, 2019).

In the area of resilience, the positive relationship of university students' resilience data to students who engage in more physical activity is more nuanced (Ho et al., 2015). As the scientific rationale for this research indicates, incorporating methods to deploy resilience can lead to better outcomes and prevent or alleviate anxiety and stress in our students (Li et al., 2020). There are three fundamental aspects that physical activity brings, and that we can scrutinise in our research, firstly the component of emotions in the development of sport practice, pointing out how affective processes change into emotions. As a second pillar, to know that the dynamics of affective processes and their capital effects on sports performance and as a third basic aspect, to know that emotions must be regulated and affective processes, and physical activity helps us to do so (Jekauc et al., 2021).

In relation to the impact of physical activity and negative emotions, an inverse correlation was identified between duration of physical activity and metrics of emotional exhaustion and depersonalisation. Individuals who continuously engaged in activity and exercise tended to have reduced rates on these dimensions of negative emotions, highlighting the negative correlation between duration of physical activity and negative emotions. Consistent participation in physical activity induces significant psychological benefits, attributed to the release of key neurotransmitters such as serotonin and dopamine. In addition, a correlation has been

identified between physically inactive lifestyles and negative self-image perception (Melguizo-Ibáñez et al., 2022).

The practice of physical activity has the potential to positively influence the self-concept of individuals and to promote psychological well-being in adolescence, through the improvement of perception and satisfaction with one's own body. In this context, it is essential that educational psychopedagogical policy makers, as well as teachers from different fields of knowledge, implement strategies that promote physical activity in the academic environment, and that high quality programmes are provided to increase physical activity during the students' formative years. (Fernández-Bustos et al., 2019).

Highlighting the importance of students who habitually practice physical activity have a greater and better personal perception that in relation to resilient processes forge a better personal self-concept (Fraguela-Vale et al., 2016).

Reduced stress and a harmonious practice of physical activity also promote high resilience in various spheres of life. In contrast, obsessive passion, high stress and low physical activity are associated with decreased resilience or even the absence of resilience in all areas of life (Paquette et al., 2023).

The present research has a series of limitations since, due to its design as a cross-sectional study, it only allows us to study the relationship between the variables at that moment in time. Furthermore, the sample of participants belongs to a very specific geographical area, so it is not possible to establish generalisations in a wider area of the national geography. It should also be noted that the scope of the studies analysed was mainly in the field of education, so it should be opened up to other areas to see if there are significant differences.

With a view to future perspectives and observing the results obtained, the aim is to develop a longitudinal study and to study the short and medium-term effects of the impact of the media on the variables presented in the study and to implement an intervention programme.

5. Conclusions

Based on the hypotheses and objectives of this study, we conclude the following:

Male students who carry out physical activity practice tend to show higher levels of resilience, persevere more in their work and have greater self-control under pressure. Likewise, a lower effect of negative emotional states is observed in males who engage in physical activity. Based on the female sample, it is observed that female students have a lower level of physical activity and greater negative emotional states in relation to male students.

The results show an inverse relationship between the negative emotions of university students and their resilience to deal with scenarios. The results of the sample in which the values are higher in the resilience data are positively correlated with greater self-sufficiency to resolve situations. The practice of physical activity correlates inversely with negative emotions. With a greater practice of physical activity, research correlates a higher and better emotional intelligence. In the field of resilience, we underline the positive relationship of university students, better resilient data to students who practice more physical activity.

Reference

[1] Acebes-Sánchez, J., Diez-Vega, I., Esteban-Gonzalo, S., & Rodríguez-Romo, G. (2019). Physical activity and emotional intelligence among undergraduate students: a correlational study. BMC Public Health, 19, 1241. https://doi.org/10.1186/s12889-019-7576-5

[2] Arida, R. M., & Teixeira-Machado, L. (2021). The contribution of physical exercise to Arida, R. M., & Teixeira-Machado, L. (2021). The contribution of physical exercise to brain resilience.

Frontiers in behavioral neuroscience, 14. https://doi.org/10.3389/fnbeh.2020.626769

[3] Arufe-Giráldez, V., Zurita-Ortega, F., Padial-Ruz, R., & Castro-Sánchez, M. (2019). Association between level of empathy, attitude towards physical education and victimization in adolescents: A multi-group structural equation analysis. International Journal of Environmental Research and Public Health, 16(13), 2360. https://doi.org/10.3390/ijerph16132360

[4] Cejudo, J., López-Delgado, M. L., & Rubio, M. J. (2016). Inteligencia emocional y resiliencia: su influencia en la satisfacción con la vida en estudiantes universitarios. Anuario de psicología, 46(2), 51–57. https://doi.org/10.1016/j.anpsic.2016.07.001

[5] Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). Depression and Anxiety, 18(2), 76–82. https://doi.org/10.1002/da.10113

[6] Crespo, M., Fernández-Lansac, V., & Soberón, C. (2014). Spanish version of the Connor-Davidson Resilience Scale (CD-RISC) for chronic stress situations. Behavioral Psychology, 22(2), 219-238.

[7] Daemen, M., Postma, M. R., Lindauer, R., Hoes-van der Meulen, I., Nieman, D., Delespaul, P., Breedvelt, J. J. F., van der Gaag, M., Viechtbauer, W., Schruers, K., van den Berg, D., Bockting, C., van Amelsvoort, T., & Reininghaus, U. (2021). Efficacy of a transdiagnostic ecological momentary intervention for improving self-esteem (SELFIE) in youth exposed to childhood adversity: study protocol for a multi-center randomized controlled trial. Trials, 22(1), 641. https://doi.org/10.1186/s13063-021-05585-y

[8] Daza, P., Novy, D., Stanley, M.; & Averill, P. (2002). The Depression Anxiety Stress Scale-21: Spanish Translation and Validation with a Hispanic Sample. Journal of Psychopathology and Behavioral Assessment, 24, 195–205. https://doi.org/10.1023/A:1016014818163

[9] Fernández Álvarez, N., Fontanil Gómez, Y., & Alcedo Rodríguez, Á. (2022). Resilience and associated factors in women survivors of Intimate Partner Violence: a systematic review. Anales de psicología, 38(1), 177–190. https://doi.org/10.6018/analesps.461631

[10] Fernández-Alonso, R., Álvarez-Díaz, M., Woitschach, P., Suárez-Álvarez, J., & Cuesta, M. (2017). Parental involvement and academic performance: Less control and more communication. Psicothema, 29(4), 453–461. https://doi.org/10.7334/psicothema2017.181

[11] Fernandez-Berrocal, P., Extremera, N., & Ramos, N. (2004). Validity and reliability of the Spanish modified version of the Trait Meta-Mood Scale. Psychological Reports, 94(3), 751–755. https://doi.org/10.2466/pr0.94.3.751-755

[12] Fernández-Bustos, J. G., Infantes-Paniagua, Á., Cuevas, R., & Contreras, O. R. (2019). Effect of physical activity on self-concept: Theoretical model on the mediation of body image and Physical Self-concept in adolescents. Frontiers in Psychology, 10, 1537. https://doi.org/10.3389/fpsyg.2019.01537

[13] Fraguela-Vale, R., Varela-Garrote, L., & Sanz-Arazuri, E. (2016). Ocio deportivo, imagen corporal y satisfacción vital en jóvenes españoles. Revista de Psicología del Deporte, 25(2), 33-38.

[14] García-Crespo, F. J., Fernández-Alonso, R., & Muñiz, J. (2021). Academic resilience in European countries: The role of teachers, families, and student profiles. PloS One, 16(7), e0253409. https://doi.org/10.1371/journal.pone.0253409

[15] Hays-Grudo, J., & Morris, A. S. (2020). Adverse and protective childhood experiences: A developmental perspective. American Psychological Association

[16] Ho, F. K. W., Louie, L. H. T., Chow, C. B., Wong, W. H. S., & Ip, P. (2015). Physical activity improves mental health through resilience in Hong Kong Chinese

adolescents. BMC Pediatrics, 15(1), 48. https://doi.org/10.1186/s12887-015-0365-0

[17] Ho, F. K. W., Louie, L. H. T., Chow, C. B., Wong, W. H. S., & Ip, P. (2015). Physical activity improves mental health through resilience in Hong Kong Chinese adolescents. BMC Pediatrics, 15(1), 48. https://doi.org/10.1186/s12887-015-0365-0

[18] Hoyos-Cifuentes, J. D., & Bernal-Torres, C. A. (2021). Análisis de los beneficios de la actividad física en situaciones de crisis en jóvenes universitarios con síntomas depresivos. Formación Universitaria, 14(6), 175–182. https://doi.org/10.4067/s0718-50062021000600175

[19] Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling, 6(1), 1–55. https://doi.org/10.1080/10705519909540118

[20] Jekauc, D., Fritsch, J., & Latinjak, A. T. (2021). Toward a theory of emotions in competitive sports. Frontiers in Psychology, 12, 790423. https://doi.org/10.3389/fpsyg.2021.790423

[21] Joyce, S., Shand, F., Tighe, J., Laurent, S. J., Bryant, R. A., & Harvey, S. B. (2018). Road to resilience: a systematic review and meta-analysis of resilience training programmes and interventions. BMJ Open, 8(6), e017858. https://doi.org/10.1136/bmjopen-2017-017858

[22] Ke, G. N., Grajfoner, D., Wong, R. M. M., Carter, S., Khairudin, R., Lau, W. Y., Kamal, K. A., & Lee, S. C. (2022). Building the Positive Emotion-resilience-Coping Efficacy Model for COVID-19 pandemic. Frontiers in Psychology, 13, 764811. https://doi.org/10.3389/fpsyg.2022.764811

[23] Kyriazos, T.A. (2018). Applied Psychometrics: Sample Size and Sample Power Considerations in Factor Analysis (EFA, CFA) and SEM in General. Psychology, 9(8), 86856. http://dx.doi.org/10.4236/psych.2018.98126

[24] Li, Yansong, Xia, X., Meng, F., & Zhang, C. (2020). Association between physical fitness and anxiety in children: A moderated mediation model of agility and resilience. Frontiers in public health, 8. https://doi.org/10.3389/fpubh.2020.00468

[25] Londoño, N. H., Restrepo, L. C. C., & Rojas, Z. B. (2022). Depresión y ansiedad en estudiantes que ingresan a la universidad y factores de estrés asociados. Revista Psicologia e Saúde, 121–138. https://doi.org/10.20435/pssa.v13i4.1371

[26] Lovibond, S., & Lovibond, P. (1995). Manual for the Depression Anxiety Stress Scales. Psychology Foundation.

[27] Mahdiani, H., & Ungar, M. (2021). The dark side of resilience. Adversity and Resilience Science, 2(3), 147–155. https://doi.org/10.1007/s42844-021-00031-z

[28] Marfil-Carmona, R., Ortega-Caballero, M., Zurita-Ortega, F., Ubago-Jiménez, J. L., González-Valero, G., & Puertas-Molero, P. (2021). Impact of the mass media on adherence to the Mediterranean diet, psychological well-being and physical activity. Structural equation analysis. International Journal of Environmental Research and Public Health, 18(7), 3746. https://doi.org/10.3390/ijerph18073746.

[29] Maydeu-Olivares, A. (2017) Maximum Likelihood Estimation of Structural Equation Models for Continuous Data: Standard Errors and Goodness of Fit. Structural Equation Modeling: A Multidisciplinary Journal, 24(3), 383-394. http://dx.doi.org/10.1080/10705511.2016.1269606

[30] Melguizo-Ibáñez, E., González-Valero, G., Ubago-Jiménez, J. L., & Puertas-Molero, P. (2022). Resilience, stress, and burnout syndrome according to study hours in Spanish public education school teacher applicants: An explanatory model as a function of weekly physical activity practice time. Behavioral Sciences, 12(9), 329. https://doi.org/10.3390/bs12090329

[31] Melguizo-Ibáñez, E., González-Valero, G., Zurita-Ortega, F., & Ortega-Martín, J.L. (2023). Burnout, stress and resilience in the competitive examination process for educational corps. Revista de educación (402), 29-51. https://doi.org/10.4438/1988-592X-RE-2023-402-594

[32] Melguizo-Ibáñez, E., Zurita-Ortega, F., Ubago-Jiménez, J.L., Puertas-Molero, P., & González-Valero, G. (2022). Motivational Climate, Anxiety and Physical Self-Concept in Trainee Physical Education Teachers—An Explanatory Model Regarding Physical Activity Practice Time. International Journal of Environmental Research and Public Health, 19(19), 12812. https://doi.org/10.3390/ijerph191912812

[33] Melguizo-Ibáñez, E; Ramírez-Granizo, I.A; Cristina-Villodres, G.C; Benavides-Martínez, M; Herrada-Robles, M. & García-Pérez, L. (2022). Levels of Emotional Intelligence Regarding Gender, Type of Sport Practiced and Body Mass Index in Elementary Education Students. ESHPA - Education, Sport, Health and Physical Activity, 6(3), 314-330. http://doi.org/10.5281/zenodo.7528992

[34] Miranda-Rochín, D., López-Walle, J. M., Cantú-Berrueto, A., López-Gajardo, M. Á., & García-Calvo, T. (2023). Inteligencia emocional y resiliencia en universitarios: Influencia de la cultura, del género y del deporte competitivo. Cuadernos de psicología del deporte, 23(3). https://doi.org/10.6018/cpd.560221

[35] Organización Mundial de la Salud (2020). Directrices de la OMS sobre actividad física y hábitos sedentarios. Organización Mundial de la Salud.

[36] Ortega, M., & Saavedra, S. (2014). Resilience: Physiological assembly and phychosocial factors. Procedia, Social and Behavioral Sciences, 132, 447–453. https://doi.org/10.1016/j.sbspro.2014.04.335

[37] Paquette, V., Vallerand, R. J., Houlfort, N., & Fredrickson, B. L. (2023). Thriving through adversity: The role of passion and emotions in the resilience process. Journal of Personality, 91(3), 789–805. https://doi.org/10.1111/jopy.12774

[38] Ruiz, M.A., Pardo, A., & San Martín, R. (2010). Modelos de Ecuaciones Estructurales. Papeles del Psicólogo, 31(1), 34-45.

[39] Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C. & Palfai, T. P. (1995). Emotional attention, clarity, andrepair: Exploring emotional intelligence using the Trait Meta-Mood Scale. In J. W. Pennebaker (Ed.), Emotion, Disclosure and Health (pp. 125-151). American Psychological Association.

[40] San Román-Mata, S., Puertas-Molero, P., Ubago-Jiménez, J. L., & González-Valero, G. (2020). Benefits of physical activity and its associations with resilience, emotional intelligence, and psychological distress in university students from southern Spain. International Journal of Environmental Research and Public Health, 17(12), 4474. https://doi.org/10.3390/ijerph17124474

[41] Sen, A., Thulasingam, M., Olickal, J. J., Sen, A., Kalaiselvy, A., & Kandasamy, P. (2020). Inteligencia emocional y estrés percibido entre estudiantes de pregrado de universidades de artes y ciencias en Puducherry, India: un estudio transversal. Revista de Medicina Familiar y Atención Primaria, 9(9), 4942-4948.

[42] Servín, N. A., Martínez, M. A. D., González, C. A. U., Alviso, A. I., Maia, J. M. C., Ventriglio, A., Santacruz, J. A., García, O. E., & Torales, J. C. (2021). Inteligencia emocional asociada a niveles de ansiedad y depresión en estudiantes de Medicina de una Universidad pública. Anales. Universidad Nacional de Asuncion. Facultad de Ciencias Medicas, 54(2), 51–60. https://revistascientificas.una.py/index.php/RP/article/view/2336

[43] Valverde-Janer, M., Ortega-Caballero, M., Ortega-Caballero, I., Ortega-Caballero, A., & Segura-Robles, A. (2023). Study of Factors Associated with the Development of Emotional Intelligence and Resilience in University Students. Education

Sciences, 13(3). https://doi.org/10.3390/educsci13030255

[44] Wang, K., Yang, Y., Zhang, T., Ouyang, Y., Liu, B., & Luo, J. (2020). The relationship between physical activity and emotional intelligence in college students: The mediating role of self-efficacy. Frontiers in Psychology, 11, 967. https://doi.org/10.3389/fpsyg.2020.00967

[45] Warburton, D. E. R., & Bredin, S. S. D. (2019). Health benefits of physical activity: A strengths-based approach. Journal of Clinical Medicine, 8(12), 2044. https://doi.org/10.3390/jcm8122044

[46] Xiang, M.-Q., Tan, X.-M., Sun, J., Yang, H.-Y., Zhao, X.-P., Liu, L., Hou, X.-H., & Hu, M. (2020). Relationship of physical activity with anxiety and depression symptoms in Chinese college students during the COVID-19 outbreak. Frontiers in Psychology, 11, 582436. https://doi.org/10.3389/fpsyg.2020.582436

[47] Zou, L., Wang, T., Herold, F., Ludyga, S., Liu, W., Zhang, Y., Healy, S., Zhang, Z., Kuang, J., Taylor, A., Kramer, A. F., Chen, S., Tremblay, M. S., & Hossain, M. M. (2023). Associations between sedentary behavior and negative emotions in adolescents during home confinement: Mediating role of social support and sleep quality. International Journal of Clinical and Health Psychology: IJCHP, 23(1), 100337. https://doi.org/10.1016/j.ijchp.2022.100337

[48] Zúñiga-Coronado, M., Ramos-Tovar, M. E., Zamarripa-Esparza, E. A., & García-Andrés, A. (2021). Depresión y ansiedad en estudiantes universitarios. Propuesta de intervención desde la disciplina del Trabajo Social. Revista Ciencia UANL, 24(109), 8–17.