



# International Journal of Physical Education, Sports and Health

P-ISSN: 2394-1685  
E-ISSN: 2394-1693  
Impact Factor (RJIF): 5.38  
IJPESH 2023; 10(4): 07-12  
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[www.kheljournal.com](http://www.kheljournal.com)  
Received: 17-04-2023  
Accepted: 15-05-2023

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## Grit and resilience as predictors of subjective well-being among university student-athletes

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DOI: <https://doi.org/10.22271/kheljournal.2023.v10.i4a.3001>

### Abstract

Juggling the academic workloads and the constant need for physical activity the student-athlete must perform, their sense of passion and perseverance, and their capability to bounce back from these struggles could be relative and vital to their subjective well-being. This study is a predictive correlational design and was conducted on 213 Filipino university student-athletes to determine if grit and resilience are significant predictors of subjective well-being. Results showed through multiple correlations that a significant positive relationship exists between grit, resilience, and subjective well-being. Furthermore, multiple linear regression analysis revealed that grit and resilience positively predicted subjective well-being among university student-athletes.

**Keywords:** Grit, resilience, student-athletes, well-being

### 1. Introduction

According to the World Health Organization (2022) <sup>[44]</sup>, 80% of the adolescent population in the world is not physically active, which results in a deterioration of their physical and emotional health. These numbers are alarming since children and adolescents' participation in physical activity decreases noticeably with time. Since childhood and adolescence are considered years of development, people living at these stages of life can affect their health as adults (Ahmed *et al.*, 2016) <sup>[1]</sup>. A previous study showed that sports and physical exercise have a well-known favorable impact on preventing and combating different problems in the health and well-being of students (Collins *et al.*, 2018) <sup>[10]</sup>. The student-athletes need to develop physical, mental, and social skills and solidify good living choices. Hence, sports help create different emotions during different events, which includes routine interactions with other people like other players, teammates, or coaches (Trigueros *et al.*, 2019) <sup>[43]</sup>. According to Cho *et al.* (2020) <sup>[9]</sup>, student-athletes are exposed to issues with stressors such as facing a chapter in their life as they enter college, as it may require them to adjust to an independent lifestyle and these combined responsibilities as an athlete and a student that can give negative consequences on their well-being and cause them to suffer dysfunctional effects.

In the Philippines, the government recognizes sports and their significance, especially emphasizing the involvement that contributes towards the objectives of inclusivity, well-being, and education that promote the empowerment of younger people (Laredo *et al.*, 2021) <sup>[29]</sup>. In addition, sports participation serves as a co-curricular activity that helps students reduce the stress, anxiety, and worries that health issues have caused in them and bring a positive impact on their well-being (Quimbo, 2023) <sup>[37]</sup>. However, student-athletes need to be prepared for every practice and event to help them face it with positivity and readiness (Lobo *et al.*, 2022) <sup>[3]</sup>. Santos and Sagas (2022) <sup>[38]</sup> stated that student-athletes' well-being is affected when they cope with time restrictions to fulfill their academic and sports obligations.

A person's persistent endurance, also known as grit, is described as perseverance and passion for long-term goals as an indicator of success (Fernández-Martín *et al.*, 2020) <sup>[19]</sup>. According to Elumaro (2016) <sup>[17]</sup>, it is a defining component of athletic accomplishment, which resulted in the finding that grittiness on the degrees of motivation in sports. Student-athletes possess this high level of a non-cognitive trait that drives them to overcome significant challenges in life

(Battle, 2020) [5]. A previous study showed that an increased level of grit in student-athletes was associated with more satisfaction with their college experience, higher educational levels, and higher academic performance (Cormier *et al.*, 2021) [11]. Athletes with higher levels of grit tend to practice more consciously, which may have an impact on their lives, and they are particularly impacted by emotional problems and experience particular pressure from different people due to the added requirement to manage the demands of their professional sport, which is not present in the lives of regular students. Furthermore, their grit has been linked to elevated levels of happiness, positive emotions, competency, and subjective well-being, and continues to have higher retention rates (Howard *et al.*, 2022) [25].

Resilience is an adaptive attitude toward adversity while interacting with and transforming its aspects. It is also about overcoming difficulties experienced by people while also changing those (Hart *et al.*, 2016) [23]. Filipino's resilience is their strongest trait that can stand up against hardships from adversaries, "move on and rebuild easily" (Fresco, 2021) [20]. Student-athletes encounter a wide range of emotional and physical threats. Comprehension and enhancing athletes' resilience are critical to preventing performance decrease and physical and psychological challenges. According to Pedro (2016) [35], athletes' resilience uncovers personal skills, which safeguard people from the negative impacts of stressful situations. Those abilities enable athletes to adjust more quickly to the stressful situation encountered in the environment that includes individual interaction occurrences. Subjective well-being pertains to how well or negatively a person or group of individuals perceive positive and negative emotional responses and their evaluation of satisfaction towards many aspects of day-to-day living (Proctor, 2014) [36]. In college athletes' condition, one of their main characteristics of being an athletic individual is their outgoing nature. According to Zhou *et al.* (2022) [47], athletic students perform better in health habits than non-athletic students. Athletic students also have lower proportions of depression compared to non-athletic students. Lastly, athletic students have a higher proportion of good health than non-athletic students. Furthermore, DeFreese *et al.* (2021) [14] stated that aggregate former collegiate athletes reported having more positive measures of health-related quality of life than their non-athlete peers. Additionally, deteriorating well-being was mitigated or reversed when participants endorsed concussion, career-ending injury, or revenue sport participation histories or were female.

Caulfield *et al.* (2022) [7] stated that from an academic standpoint, athletes are often viewed as privileged members of the sports community, receiving university benefits. They are also the ones who are psychologically, physically, and intellectually at risk in ways that undermine the development and flourishing of their well-being. Previous studies found that grit is a significant predictor of the subjective well-being of young adults, meaning that individuals who are persistent in reaching their long-term goals have high subjective well-being (Akbag & Ümmet, 2017; Barete *et al.*, 2019) [2, 4]. Another study indicated that athletes with high levels of grit are more committed, involved, and motivated and report positive subjective well-being (Gray, 2022) [22]. Additionally, a study showed that grit is highly related to both independent and competence needs, which mediate the effect of grit on subjective well-being (Jin & Kim, 2017) [26]. On the other hand, resilience is another substantial predictor of subjective well-being. Some studies showed that resilience was positively correlated to grit, mindfulness, life satisfaction,

happiness, and more (Meyer *et al.*, 2020; Satici, 2016; Yildirim & Arslan, 2020; Zubair *et al.*, 2018) [33, 39, 46, 48]. Furthermore, students higher on grit or resilience believe that they can achieve with more effort or perseverance. Therefore, it is more likely to engage in activities for future achievement (Dweck, 2007, as cited in Yaure *et al.*, 2021) [45].

This study is supported by the Theory of Triarchic Model of Grit by Datu (2017) [12] which indicated that grit and subjective well-being are related. Three elements defined by grit in a collectivist context refer to the perseverance of effort, consistency of interests, and adaptability to situations. Student-athletes who achieve greatness in their goals through grit behaviors will experience an increase in their subjective well-being since they tend to be more ambitious, persistent, optimistic, and comprehensive. Also, they are less likely to be self-centered and hostile (Barete *et al.*, 2019) [4]. Additionally, The Resilience Theory by Garmezy (1991) [21] demonstrates the two considerations in this theory are the development of one's abilities and helpful resources which helps to reduce or eliminate the negative impacts of difficulties and danger to achieve a healthy emotional and psychological well-being (Lyu *et al.*, 2022) [31]. Resilience enables student-athletes to recover when they encounter difficulty or dissatisfaction, which are resulted in the ability to bounce back and even thrive after adversity and better well-being (Sorkkila *et al.*, 2019) [41]. Therefore, this study aims to provide evidence about the significant relationship between grit, resilience, and well-being. Moreover, it investigates whether grit and resilience can predict the subjective well-being among university student-athletes.

## 2. Methods

### 2.1 Design and Participants

This study utilized a predictive correlational research design which determines the predictive relationship of the predictors (i.e., grit and resilience) towards the outcome variable (i.e., subjective well-being). Furthermore, this study used a purposive sampling method which determines the sample population of the participants. Over 213 Filipino university student-athletes from selected public or private universities within Manila, Philippines, participated in the study. They should have at least two (2) years of experience as an athlete and never had a severe injury before. Table 1 presented the demographics of the participants.

**Table 1:** Socio-demographic profile of the student-athletes

Demographic Characteristics	Total (N = 213)	M (SD)	%
<b>Gender</b>			
Male	96		45.1
Female	117		54.9
<b>Age</b>		21.24 (1.31)	
<b>Sports</b>			
Volleyball	60		28.2
Taekwondo	35		16.4
Chess	28		13.1
Basketball	23		10.8
Badminton	22		10.3
Swimming	16		7.5
Judo	10		4.7
Football	8		3.8
Cheering Squad	5		2.3
Lawn/Table Tennis	4		1.9
Track and Field	2		1.0

### 2.2 Measurements

Short Grit Scale (Grit-S; Duckworth & Quinn, 2009) [15] is an 8-item scale that measures an individual's consistency of

interest and perseverance of effort, with a 5-point Likert scale ranging from 1 (not like me at all) to 5 (very much like me). This consists of positive items (items 2, 4, 7, and 8), and negative items (items 1, 3, 5, and 6) which are computed in reverse. Individual's total possible scores can range from 8-40, with higher scores suggest higher grit. This scale was locally validated by Datu, *et al.* (2016) [13] among Filipino college students with an internal consistency and reliability of 0.61. In this study, internal consistency reliability yielded Cronbach's  $\alpha = 0.64$ .

Connor-Davidson Resilience-10 (CD-RISC-10; Campbell-Sills & Stein, 2007) [6] is a 10-item scale that measures an individual's resilience, with a 5-point Likert scale ranging from 0 (not true at all) to 4 (true nearly all the time). The items correspond to how flexible (items 1 and 5), self-efficacious (items 2, 4 and 9), able to regulate emotion (item 10), optimistic (items 3, 6 and 8), and a person can maintain attention under stress (item 7). Individual's total possible scores can range from 0-40, with higher scores suggest greater resilience. This scale was locally validated by Klainin-Yobas *et al.* (2021) [27] among undergraduate students with a high internal consistency and reliability of 0.89. In this study, CD-RISC-10 demonstrated good internal consistency reliability, with Cronbach's  $\alpha = 0.96$ .

Subjective Well-being Inventory (SUBI; Sell, 1994) [40] is a 40-item scale used to assess how well or negatively a person feels about many aspects of day-to-day living that taps general well-being (i.e., positive affect, expectation-achievement congruence, confidence in coping, transcendence, family group support, social support, primary group concern, inadequate mental mastery, perceived ill-health, deficiency in social contacts) and general well-being (i.e., negative affect). It has a 3-point scale where response categories for positive items (items 1- 15, 21-23, 28) attribute the values 3, 2, and 1 and 1, 2, and 3 for the negative items (items 16- 20, 24-27, 29-40). Individual's total possible scores can range from 40-120, with higher scores suggest greater subjective well-being. In this study, SUBI demonstrated good internal consistency reliability, with Cronbach's  $\alpha = 0.80$ .

### 2.3 Data Collection and Analysis

We obtained approval from the Ethics Review Committee of the University. We gathered participants online by sharing the Call-for-Participant infographic on various social media platforms and gained approval from different sports/athletic directors in different universities within Manila and obtained informed consent. Then, a Google form link was distributed to the participants with the following sequence of the questionnaire: Personal Data Sheet, Grit-S, CD-RISC-10, and SUBI.

To analyze the collected data, the Statistical Package for Social Sciences (SPSS ver. 26) was used. Multiple Correlation Coefficient was used to determine the relationship between the variables, while Multiple Linear Regression was used to determine the predictive relationship between grit, resilience, and subjective well-being. Using Harman's Single Factor Test which resulted a variance of 16%, the scales used in this study showed a common method variance is not an issue. Furthermore, the assumption checks were also analyzed. The collinearity statistics showed a scores below 10 on variation inflation factor. Normality test using Shapiro-Wilk Test provided that gathered data was on a normal distribution. There are no outliers showed in this study.

### 3. Results

Table 2 shows the results of multiple correlation between the

variables and showed that a significant relationship existed between grit, resilience, and subjective well-being.

**Table 2:** Descriptive statistics and correlations between grit, resilience, and subjective well-being

	M	SD	1	2	3
1 Grit (Grit-S)	26.69	4.55	-		
2 Resilience (CD-RISC-10)	27.28	9.53	.23**	-	
3 Subjective Well-being (SUBI)	80.92	9.47	.29**	.23**	-

N = 213, \*\*P < .01

Significant positive correlations existed between grit and resilience ( $r = .23, p < .01$ ), grit and subjective well-being ( $r = .29, p < .01$ ), and resilience and subjective well-being ( $r = .23, p < .01$ ).

Table 3 shows the results of multiple regression analysis of grit and resilience on the impact of the subjective well-being.

**Table 3:** Regression coefficients of grit and resilience on subjective well-being

Predictor	Estimate	SE	95% CI		T	P
			LL	UL		
Intercept	62.41	3.78	54.96	69.87	16.50	< .001
Grit	.52	.14	.25	.80	3.74	< .001
Resilience	.17	.07	.04	.30	2.55	.011

CI = Confidence Interval

The  $R^2$  value of .11 revealed that the predictors explained 11% variance in the outcome variable with  $F(2, 210) = 13.2, p < .01$ . The findings revealed that grit ( $\beta = .25, p < .01$ ) and resilience ( $\beta = .17, p < .05$ ) positively predicted subjective well-being.

### 4. Discussion

This study investigated the significant relationship between the variables and if grit and resilience can predict the subjective well-being among university student-athletes. Results showed that grit, resilience, and subjective well-being have a significant positive relationship, which implies that when grit and resilience increase or decreases, subjective well-being also increases or decreases. Previous studies support this finding, which indicated that the positive link between grit and subjective well-being is mainly because of the strong persistence in effort and plays different roles in influencing and shaping subjective well-being (Hayden, 2018; Kwon, 2021) [24, 28]. Individuals who persistently reach their long-term goals have high subjective well-being (Akbag & Ümmet, 2017; Barete *et al.*, 2019) [2, 4]. On the other hand, resilience is psychological strength that could affect and enhance subjective well-being; thus, students with a higher level of resilience also have greater subjective well-being (Eva *et al.*, 2021; Zubair *et al.*, 2018) [18, 48]. A study suggested that resilience and subjective well-being can improve an individual's self-confidence, optimism, activities, friendship relations, and pessimism in the sub-dimensions of subjective well-being in a positive direction (Eldeleklioglu & Yıldız, 2020) [16]. Asanjarani *et al.* (2022) [3] revealed that students who can control their pressure and manages their emotions showed a positive relationship between resilience and subjective well-being.

Furthermore, a significant positive relationship exists between grit and resilience, which implies, the higher level of grit, the more resilient the student-athlete is. Those people who reported having a higher grit develop a way of coping with negativity and could protect their psychopathology, while more resilient people are the ones who can carry on while facing obstacles and are determined to pursue their passions, and their resilience may lead to higher grit over time (Musso *et al.*, 2019) [34]. In addition, students who are higher in grit or



resilience believe that they can achieve more with the use of more effort and perseverance, and therefore more likely to engage in activities that could contribute to their future achievements, in which they feel they can improve themselves, rather than having a static attitude towards learning (Dweck, 2007, as cited in Yaure *et al.*, 2021) [45]. On the contrary, student-athletes who are not persevering are less likely to gain the ability to bounce back after adversity. For instance, a student-athlete who lost a match is more likely to have difficulty regaining their composure. A previous study indicated that students with low levels of grit and resilience have difficulty coping with their challenges in life (Calo *et al.*, 2019) [8].

Our study showed that a significant positive relationship exists between the variables. Therefore, to determine the predictive relationship of grit and resilience on subjective well-being, this study used multiple regression analysis whose results showed that grit and resilience positively predicted subjective well-being among university student-athletes. It implies that when grit and resilience increases, a positive impact happens on subjective well-being. In contrast, when grit and resilience decreases, a negative impact happens on subjective well-being. This finding is supported by previous studies, which indicated that grit is a substantial predictor of subjective well-being because individuals with this trait tend to be more responsible, persistent in achieving their long-term goals, and capable of self-control (Gray, 2022; Jin & Kim, 2017) [22, 26]. On the other hand, resilience is another substantial predictor to enhance subjective well-being, such as mindfulness, satisfaction in life, happiness, and being open to other people (Macía *et al.*, 2021; Satici, 2016; Tomy & Weinberg, 2016) [32, 39, 42]. Furthermore, resilience enables student-athletes to recover when they encounter difficulty or dissatisfaction resulting in the ability to bounce back and even thrive after adversity and better well-being (Sorkkila *et al.*, 2019) [42].

## 5. Conclusion

This study established that a significant positive relationship exists between grit, resilience, and subjective well-being, which implies that grit and resilience positively affect subjective well-being. The variable goes on the same directional pattern, if the level of grit and resilience increases, subjective well-being increases. When the level of grit and resilience decreases, subjective well-being decreases. Furthermore, grit and resilience have a significant positive association in predicting subjective well-being, which implies that grit and resilience combined positively impact the subjective well-being among university student-athletes.

## 6. Limitations and Recommendation

The present study provides evidence of the predictive relationship between grit and resilience on subjective well-being. Limitations include the fact that this study was conducted only from the selected universities in Manila, Philippines. Secondly, this study is limited only to the perspective of the Filipino student-athletes. Lastly, the researchers evaluated the study from the perspective of the student-athletes simultaneously and not from the students nor the athletes alone, also considering the different types of sports they are in.

Therefore, as a recommendation, this study can provide several ideas to university sports coaches that they should be more considerate and maximize the use of mental health resources of the university for those student-athletes who

could use its help by establishing activities or events that will address the state of grit, resilience, and the well-being of their student-athletes. In addition, student-athletes should focus on nurturing and improving their grit and resilience by using different intervention programs that boost their well-being. Lastly, future researchers could use this study as supporting evidence when investigating factors associated with student-athletes' grit, resilience, and well-being.

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