

A Study of the Relationship Between Mental Toughness and College Students' Subjective Well-Being

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Abstract:

In this study, 648 college students were selected as subjects, and their mental toughness and subjective well-being were investigated by the questionnaire method. The results showed that: All five factors of mental toughness were significantly and positively correlated with subjective well-being. There exists a notable disparity between male and female college students with regards to the extent of family support and interpersonal assistance they receive. Additionally, a significant distinction can be observed between undergraduates and specialist students in terms of their level of goal focus, positive cognition, family support, and subjective well-being. Furthermore, there is a marked variation in grades when considering factors such as goal focus, emotional control, family support, interpersonal assistance, and subjective well-being. The construct of mental toughness had a favourable association with subjective well-being. This research not only examined the correlation between mental toughness and subjective well-being but also provided empirical support and theoretical guidance for more targeted guidance for college students to enhance their subjective well-being.

Keywords:

Mental Toughness, Subjective Well-Being, College Students

1. Introduction

Depression and anxiety are on the rise among college students, and one study found that the prevalence of anxiety among college students at one university was 22.73%; the prevalence of depression was 29.32% [1]. The outbreak of the epidemic has had a significant influence on this particular pattern, leading to a heightened sense of psychological stress among a larger number of students. Furthermore, the prevalence of anxiety symptoms among college students during the epidemic was shown to be higher compared to the period before the outbreak, with rates of 24.2% and 21.9% respectively [2]. This highlights that college students are in urgent need of mental health support and that timely attention should be paid to the psychological state of college students and targeted psycho-behavioural interventions should be taken to enhance their mental health.

The Third International Conference on Mental Health has identified “a sense of well-being” as one of the key indicators of mental health [3]. It has been found that individuals who often experience a sense of well-being have a good level of mental health [4]. Subjective well-being (SWB) pertains to an individual’s comprehensive evaluation of their quality of life, as determined by self-defined criteria. These criteria mostly include two fundamental elements: The topic of interest is to the subjective assessment of one's overall life satisfaction and emotional experience [5]. As per the assertions of certain researchers, subjective well-being encompasses two fundamental elements, namely cognitive appraisal and emotional experience. The word “former” refers to an individual's comprehensive cognitive evaluation of their quality of life, which is assessed by individually established criteria, such as life satisfaction. The latter pertains to the emotional aspects of an individual's life, encompassing both positive and negative emotions [6]. Domestic happiness research has advanced in recent years. However, the findings about the elements that influence people’s subjective happiness are not consistently aligned [7]. The subjective well-being of a person may be classified into two distinct categories: external variables and internal ones, which are intimately interconnected [8]. External determinants primarily include familial elements, such as the psychological well-being of parents, as well as peer-related aspects, such as connection to peers, among others. Internal components primarily include individual personality features, such as self-esteem, as well as emotional states, such as despair and anxiety [9,10]. Researchers have placed particular emphasis on mental toughness while examining internal components.

Mental toughness (mental toughness) refers to an individual's effective response and adaptation when faced with adversity, trauma, tragedy, threat, or significant stress [11]. Mental toughness is often seen as a reasonably enduring personal attribute marked by the capacity to effectively navigate and conquer challenges, ultimately restoring a state of equilibrium. This attribute becomes beneficial when people encounter setbacks [12]. Mental toughness enables individuals to show good adaptability and respond positively and favourably to find solutions despite facing stress and difficulties [13]. Some studies have found that mental toughness predicts positive emotions and general well-being [14] and has been recognised as an important factor influencing college students’ subjective well-being. Nevertheless, the majority of prior research has mostly concentrated on examining the many aspects that impact an individual’s perceived well-being, while allocating less attention to exploring the connection between mental toughness and subjective well-being [15]. Hence, it is essential to do a comprehensive investigation of the correlation between mental resilience and individual perceptions of overall psychological well.

The objective of this research is to examine the relationship between psychological resilience and the subjective well-being of college students. The primary objective of this study is to collect empirical data and provide theoretical perspectives in order to improve the mental health and subjective well-being of college students. This will be achieved through the administration of a survey to college students.

2. Research Methodology

2.1. Subjects

This research used the convenience sampling technique to administer online surveys to two universities located in the provinces of Shandong and Shanxi. Following the elimination of invalid questions, a total of 648 valid questionnaires

were collected. The distribution of students in the study consisted of 265 freshmen (40.9%), 262 sophomores (40.4%), and 121 juniors (18.7%). Additionally, there were 227 male students (35%) and 421 female students (65%). The research included patients within the age range of 17 to 24 years, with a calculated mean age of 19.73 and a standard deviation of 1.251.

2.2. Tools

2.2.1. Mental Toughness Scale

The scale was developed by Yueqin Hu and Yiqun Gan via the use of exploratory component analysis and item discrimination analysis, in alignment with the process model of mental toughness. The measure has a total of 27 items and encompasses five distinct elements, namely positive cognition, goal focus, interpersonal help, family support, and emotional management. The coefficient of Cronbach's alpha for the scale used in this particular investigation yielded a value of 0.904.

2.2.2. Subjective well-being scale

Duan altered the General Well-Being Scale (GWB), originally developed by overseas researchers. The revised scale was reduced from 33 to 18 question items. The measure has six components, including concern for health, life satisfaction and interest, emotional and behavioural regulation, energy level, mental state of happiness or depression, and relaxation and anxiety levels. A higher overall score on the scale indicates a greater level of subjective well-being. The Cronbach's alpha coefficient obtained for the scale used in this particular investigation was 0.766.

3. Results

3.1. Common method bias test

In the present investigation, In order to examine the probability of common method bias occurring in both the independent and dependent variables, Harman's one-way test was applied. The findings indicated the presence of seven components with eigenvalues above the threshold of 1. The component with the greatest magnitude contributed to 26.712% of the overall variance, a value that is below the critical criterion of 40%. Hence, it may be inferred that this study does not demonstrate substantial common technique bias.

3.2. The study examines the means, standard deviations, and correlation of variables

The researchers performed descriptive and correlation analyses on each variable. The findings are presented in Table 1, indicating that there were significant positive correlations between goal focus and emotional control, positive cognition, family support, interpersonal assistance, and subjective well-being ($r = 0.082$, $p < 0.05$; $r = 0.881$, $p < 0.01$; $r = 0.483$, $p < 0.01$; $r = 0.262$, $p < 0.01$; $r = 0.414$, and $p < 0.01$).

Table 1. Description of the variables, correlation results.

	M	SD	1	2	3	4	5	6
1.Goal Focus	18.164	4.400	1					
2.Emotional control	19.028	4.876	0.082*	1				
3.Active cognition	14.806	3.488	0.881**	0.026	1			

4.Family support	21.224	4.295	0.483**	0.463**	0.461**	1		
5.Interpersonal assistance	19.917	4.526	0.262**	0.683**	0.221**	0.587**	1	
6.Subjective well-being	77.824	12.687	0.414**	0.541**	0.369**	0.518**	0.550*	1

Note: * means $P < 0.05$, ** means $P < 0.01$, and *** means $P < 0.001$. The same goes for below.

3.3. Differences in meta-emotions and subjective well-being on demographic variables

A series of independent sample t-tests were performed to examine the relationship between gender and various variables. The findings, presented in Table 2, indicate statistically significant disparities between male and female college students in terms of family support ($t = -3.005$, $p < 0.01$) and interpersonal assistance ($t = -2.246$, $p < 0.05$). Specifically, female college students exhibit significantly higher levels of family support and interpersonal assistance compared to their male counterparts. There were no statistically significant disparities seen between male and female college students in relation to goal focus, emotional control, positive cognition, or subjective well-being.

Table 2. Gender differences in mental toughness and subjective well-being.

Variant	male (N=227)	female (N=421)	T
Goal Focus	17.863±5.158	18.325±3.929	-1.178
Emotional control	19.436±5.191	18.808±4.69	1.52
Active cognition	14.573±4.131	14.931±3.084	-1.146
Family support	20.537±4.314	21.594±4.244	-3.005**
Interpersonal assistance	19.374±4.466	20.209±4.537	-2.246*
Subjective well-being	77.582±12.891	77.955±12.589	-0.357

Independent samples t-tests were conducted for each variable on academic qualifications, and The findings are shown in Table 3. There are notable distinctions between undergraduate and specialist students on goal focus, positive cognition, family support, and subjective well-being ($t = 2.573$, $p < 0.01$; $t = 2.225$, $p < 0.05$; $t = 2.381$, $p < 0.05$; and $t = 2.429$, $p < 0.05$), and undergraduate students have significantly higher levels of goal concentration, positive cognition, family support, and subjective well-being than those of the specialist students. The difference between undergraduate and specialist students in emotional control and interpersonal assistance was not significant.

Table 3. Differences in psychological resilience and subjective well-being by education level.

variant	Undergraduate (N=363)	Specialist students (N=285)	T
Goal Focus	18.562±4.121	17.656±4.691	2.573**
Emotional control	19.16±4.863	18.86±4.897	0.777
Active cognition	15.08±3.227	14.456±3.772	2.225*
Family support	21.579±4.275	20.772±4.286	2.381*
Interpersonal assistance	20.069±4.604	19.723±4.425	0.966
Subjective well-being	78.893±12.867	76.463±12.343	2.429*

An ANOVA test was conducted for each variable on grade level, and table 4 displays the results: There were notable distinctions between grades on goal focus, emotional control, family support, interpersonal assistance, and subjective well-being. Goal Focus ($F = 4.456$, $p < 0.05$), Emotional Control ($F = 10.34$, $p < 0.001$), Family Support ($F = 12.357$, $p < 0.001$), Interpersonal Assistance ($F = 16.202$, $p < 0.001$), and Subjective Well-Being ($F = 13.354$, $p < 0.001$). After the LSD post-test, it was found that freshmen scored significantly lower than other grade students in terms of goal focus, family support, and subjective well-being; in terms of emotional control scores, sophomores are significantly higher than other grade students; in terms of interpersonal assistance scores, freshmen are significantly lower than juniors, and juniors are significantly lower than sophomores.

Table 4. ANOVA test for grade level on mental toughness and subjective well-being.

Grade	Goal Focus		Emotional control		Active cognition		Family support		Interpersonal assistance		Subjective well-being	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Freshman (N=265)	17.574	4.482	18.128	4.307	14.434	3.578	20.249	4.022	18.811	4.153	74.793	11.129
Sophomore (N=262)	18.439	4.633	20.023	5.227	14.985	3.618	22.031	4.365	21.004	4.602	80.076	13.654
Junior (N=121)	18.860	3.477	18.843	4.897	15.231	2.900	21.612	4.335	19.984	4.601	79.587	12.463
F	4.456*		10.34***		2.766		12.357***		16.202***		13.354***	
LSD	1 < 2, 3		2 > 3, 1				1 < 2, 3		1 < 3 < 2		1 < 2, 3	

Note: 1 = freshman; 2 = sophomore; 3 = junior.

3.4. Regression analysis of meta-emotions on subjective well-being

Multiple regression analyses were conducted to examine the predictive effects of the dimensions of psychological toughness on subjective well-being, using goal focus, emotional control, positive cognition, family support, and interpersonal assistance as independent variables and subjective well-being as the dependent variable. The findings are shown in Table 5 and Table 6, as follows: The regression model of the dimensions of mental toughness on subjective well-being was significant ($F = 110.086$, $p < 0.001$), statistically significant, and explained 46.2% of the total variance. Goal focus ($t = 3.396$, $p < 0.01$), emotional control ($t = 8.606$, $p < 0.001$), family support ($t = 2.859$, $p < 0.01$), and interpersonal assistance ($t = 3.804$, $p < 0.001$) were significant positive predictors of subjective well-being.

Table 5. Parameters of the regression model of mental toughness on subjective well-being.

R	R-sq	Adjusted R-sq	SE	F	P
0.679	0.462	0.457	9.345	110.086	0.000

Table 6. Regression model of mental toughness on subjective well-being.

	Non-standardized Coefficient		Standardized Coefficient	T	P	Covariance Statistics
	B	standard error	β			VIF
(Constant)	28.156	2.227				
Goal Focus	0.610	0.180	0.211	3.396	0.001	4.622
Emotional control	0.920	0.107	0.354	8.606	0.000	2.015

Active cognition	0.305	0.226	0.084	1.348	0.178	4.610
Family support	0.342	0.120	0.116	2.859	0.004	1.958
Interpersonal assistance	0.467	0.123	0.167	3.804	0.000	2.290

4. Discussion

A notable disparity was seen between male and female college students with regard to familial support and interpersonal assistance. with female college students having significantly higher levels of family support and interpersonal assistance than their male counterparts, similar to earlier research findings [16,17]. The reason for this may be that social and cultural perceptions may lead to the fact that females are more inclined to seek and receive family support and interpersonal assistance, while males facing social expectations are more inclined to be independent and solve problems on their own. In addition, individual personality and traits, as well as educational and social environments, may also have an impact on this gender difference, making it easier for females to build support networks. The results of this study reflect the diversity of gender differences in needs and behaviours.

There were significant differences between undergraduates and specialist students in goal focus, positive cognition, family support, and subjective well-being. Similar to the results of previous studies [18], undergraduates had significantly higher levels of goal focus, positive cognition, family support, and subjective well-being than specialist students. Undergraduate education usually provides broader knowledge and deeper learning experiences, which develop stronger goal-setting and problem-solving skills in undergraduates. In addition, undergraduates usually endure higher expectations in terms of academic and career development, which leads to more family support.

Similar to earlier research, there were substantial variations between grades in goal focus, emotional control, family support, interpersonal assistance, and subjective well-being [19]. In goal focus, family support, and subjective well-being scores, freshmen were significantly lower than students in other grades; in emotional control scores, sophomores were significantly higher than students in other grades; and in interpersonal assistance scores, freshmen were significantly lower than juniors, and juniors were significantly lower than sophomores. The reason for this analysis may be that freshmen usually experience a new learning environment and social pressure and therefore show lower psychological resilience and subjective well-being. Overall, college students in different grades may be affected by academic pressure, social environment, and individual growth environment, leading to these differences.

The results of the correlation analysis showed that all five factors of mental toughness were significantly positively correlated with subjective well-being. This finding suggests a positive correlation between the degree of mental toughness and the level of subjective well-being. Following the implementation of multiple regression analysis, it was determined that goal focus, emotional control, family support, and interpersonal assistance exhibit a positive predictive relationship with subjective well-being. Notably, emotional control emerged as the most influential predictor, signifying that individuals with greater emotional control possess heightened adaptive capabilities and dynamic regulation of their environment, consequently leading to elevated levels of subjective well-being.

In conclusion, improving the resilience of college students' mental fortitude not only helps to improve their subjective well-being but also enables them to better cope with various pressures and challenges in life, realise individual growth, and improve their mental health.

5. Conclusions

Subjective well-being is shown to have strong and favourable associations with goal focus, emotional control, positive cognition, family support, and interpersonal assistance. There exists a notable disparity between male and female college students with regards to the extent of family support and interpersonal assistance they receive. Additionally, a significant distinction can be observed between undergraduates and specialist students in terms of their level of goal focus, positive cognition, family support, and subjective well-being. Furthermore, there is a marked variation in grades when considering factors such as goal focus, emotional control, family support, interpersonal assistance, and subjective well-being. Mental toughness is a positive predictor of subjective well-being.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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