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The Purpose of Determining Prediction of Quality of Life Based on the Feeling of Psychological Coherence and Tolerance of Distress in Students

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ABSTRACT

The study aimed to predict the quality of life among undergraduate students at Tehran University of Science and Research using a descriptive and correlational approach, focusing on psychological coherence and distress tolerance. The statistical population consisted of randomly selected students. Information was gathered through the administration of three psychological coherence questionnaires, each containing 29 items, developed by Antonovsky (1993), the World Health Organization's quality of life questionnaire, which contains 24 items and Simmons and Gaher's (2005) distress tolerance scale that contains 15 items. The validity of the questionnaires' content and structure was established through their administration to a group of participants, whilst their reliability was calculated using Cronbach's alpha coefficient, reporting values of (0.742), (0.864) and (0.725). Data analysis involved the use of descriptive statistics such as frequency, percentage, mean, and standard deviation, in addition to inferential statistics including Pearson's correlation coefficient and regression. The findings indicated that among the variables examined in the regression, the feeling of psychological coherence was the primary factor affecting the quality of life in the first step, while in the second step, along with psychological coherence, distress tolerance also contributed significantly. Following step-by-step regression analysis, a significant relationship between the feeling of psychological coherence, tolerance of distress, and quality of life was found. The Coefficient of sense of psychological coherence explains 34.2% of the variance of quality of life in the first step, while in the second step, the dimensions of sense of psychological coherence and distress tolerance explain 35.7% of the variance of quality of life.

1. INTRODUCTION

Quality of life (QoL) is a multidimensional construct that encapsulates an individual's subjective perception of their well-being across physical, psychological, social, and environmental domains [1]. For university students, QoL is particularly critical due to the unique challenges they encounter during this pivotal developmental stage, including academic pressures, social transitions, and psychological stressors [2]. These challenges can significantly affect

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students' mental health, academic performance, and overall life satisfaction. Therefore, identifying psychological factors such as sense of coherence (SoC) and distress tolerance as predictors of QoL is essential for designing interventions to enhance student well-being [3].

Sense of coherence, a concept developed by Aaron Antonovsky, refers to an individual's global orientation toward viewing life as comprehensible, manageable, and meaningful [4]. It consists of three core components: comprehensibility (perceiving life events as understandable), manageability (believing in one's ability to cope with challenges), and meaningfulness (feeling that life is purposeful). Research has consistently shown that a strong SoC acts as a buffer against stress, contributing to improved mental health and QoL [5]. For example, a study among university students found that higher SoC was associated with lower levels of anxiety and depression, as well as enhanced QoL [6]. This suggests that students with a robust SoC are better equipped to navigate the complexities of academic and personal life, leading to improved well-being.

Distress tolerance, defined as the ability to endure and manage negative emotional states and stressful situations, is another key factor influencing students' QoL [7]. This construct is particularly relevant in the university context, where students frequently face stressors such as exams, deadlines, and social adjustments. Distress tolerance encompasses the capacity to tolerate negative emotions and to function effectively under stress [8]. Studies indicate that students with high distress tolerance are more resilient to psychological distress, which positively impacts their QoL [9]. For instance, research has shown that distress tolerance mediates the relationship between perceived stress and psychological well-being among students, underscoring its role in promoting adaptive coping strategies [10].

The interplay between SoC and distress tolerance is crucial for understanding students' QoL. A strong SoC enables students to perceive challenges as manageable and meaningful, while high distress tolerance equips them to handle emotional difficulties without becoming overwhelmed [11]. Together, these factors may enhance students' ability to thrive in demanding academic environments. Research has demonstrated that students with higher SoC and distress tolerance report better mental health outcomes and greater life satisfaction [12]. However, the combined predictive power of these two constructs on students' QoL remains underexplored, highlighting the need for further investigation.

The significance of studying QoL among students extends beyond individual well-being to broader societal implications. As future professionals and leaders, students' mental health and QoL directly influence their academic success and future contributions to society [13]. Poor QoL can lead to reduced academic performance, increased dropout rates, and long-term mental health challenges. Thus, understanding the psychological factors that predict QoL is critical for developing effective interventions to support students' resilience and well-being [14]. For example, a study among medical students showed that interventions aimed at enhancing SoC and coping skills significantly improved QoL, suggesting potential applications for broader student populations [15].

This study aims to investigate the predictive role of sense of coherence and distress tolerance in determining students' QoL. By utilizing validated instruments, such as the World Health Organization Quality of Life-BREF (WHOQOL-BREF) and the Sense of Coherence Scale (SOC-13), this research seeks to provide a comprehensive analysis of how these psychological constructs interact to influence QoL. The findings are expected to contribute to the development of targeted interventions that enhance students' mental health and academic success. Given the rising prevalence of psychological stressors in higher education, understanding the roles of SoC and distress tolerance is vital for fostering a supportive academic environment [16].

In conclusion, this study addresses a critical gap in the literature by exploring the combined impact of SoC and distress tolerance on students' QoL. By identifying how these factors contribute to well-being, the research aims to inform educational and psychological interventions that promote resilience and life satisfaction among students. The results may guide policymakers and educators in creating programs that enhance students' ability to cope with challenges, ultimately contributing to their academic success and long-term well-being.

2. RESEARCH METHOD

This study is practical in purpose and employs descriptive data collection methods. It utilizes correlational research variables and targets a statistical population of 384 students from Tehran University of Science and Research, determined based on the sample size table of Krejcie and Morgan (1970) [17].

To measure psychological coherence, the Antonovsky (1993) Sense of Coherence Questionnaire (SOC-29) was used. This instrument consists of 29 items rated on a 7-point Likert scale, covering three main dimensions: comprehensibility, manageability, and meaningfulness. Antonovsky (1993) reported a Cronbach's alpha of 0.95 for the scale and confirmed its validity and reliability across samples from 20 countries. Numerous studies have further demonstrated high levels of content and construct validity for the SOC-29 scale [18].

Quality of life was assessed using the World Health Organization Quality of Life questionnaire (WHOQOL-BREF). This instrument covers four domains:

- Physical Health
- Psychological Health
- Social Relationships
- Environment

The questionnaire includes 26 items: 7 for physical health, 6 for psychological health, 3 for social relationships, and 8 for environment. Additionally, 2 general items assess overall quality of life and general health. The WHOQOL-BREF has been validated in international field trials, demonstrating strong reliability and cross-cultural applicability [19-20].

Distress tolerance was measured using the Distress Tolerance Scale (DTS) developed by Simons and Gaher (2005). The DTS consists of 15 items and includes four subscales: (1) tolerance of emotional distress, (2) absorption by negative emotions, (3) appraisal of distress, and (4) regulation efforts. Responses are rated on a 5-point Likert scale. High scores reflect greater tolerance of distress. Reported alpha coefficients for the subscales range from 0.70 to 0.82, with 0.82 for the overall scale, and a six-month test-retest intraclass correlation of 0.61 [7].

Pearson's correlation test was used to examine relationships between the study variables. The Kolmogorov–Smirnov test was applied to assess data normality, and stepwise regression was employed to determine the predictive relationships among variables. Data analysis was performed using SPSS version 23.

3. FINDINGS

The sense of psychological coherence and distress tolerance can predict the quality of life.

Table 1. Table of multiple correlation coefficient of quality of life with sense of psychological coherence and distress tolerance.

Watson Durbin	Significance level	F factor	The squared adjusted multiple correlation coefficient	Squared multiple correlation coefficient	Multiple correlation coefficient	predictor variable	Statistical index	Criterion variable
1/873	0/001	197/980	0/340	0/342	0/585	A sense of psychological coherence	Step one	Quality of life
	0/001	105/424	0/353	0/357	0/597	Tolerate distress	Step two	

The results from Table 1 indicate that among the examined variables in the regression, the feeling of psychological coherence was the most effective predictor of quality of life during the first step. The results from Table 1 indicate

that among the examined variables in the regression, the feeling of psychological coherence was the most effective predictor of quality of life during the first step. However, in the second step, distress tolerance also served as a significant predictor in addition to the feeling of psychological coherence. The results from Table 1 indicate that among the examined variables in the regression, the feeling of psychological coherence was the most effective predictor of quality of life during the first step. The step-by-step regression analysis demonstrates a significant relationship between psychological coherence, distress tolerance, and quality of life. Based on the analysis, the first step reveals that the coefficient of psychological coherence explains 34.2% of the variance in quality of life. In the second step, the dimensions of psychological coherence and distress tolerance explain 35.7% of the variance in quality of life.

An assumption taken into account in regression analysis is the independence of errors, which refers to the distinction between actual values and values projected by the regression equation. If the hypothesis of errors being independent is rejected and there is correlation between errors, regression cannot be used. Therefore, the Durbin Watson test was employed to verify the independence of the errors from each other. The Durbin Watson score ranges from zero to four. If there is no serial correlation among residuals, the value of this statistic should be approximately 2. A value close to zero indicates positive correlation, while a value near 4 indicates negative correlation. Generally, if this statistic falls between 1.5 and 2.5, there is no cause for concern. In our hypothesis, the value of this statistic was 1.873, which is quite appropriate.

Table 2. Beta coefficient table in predicting quality of life with sense of psychological coherence and distress tolerance

Significance level	t coefficient	Beta coefficients Standard	Unstandardized beta coefficients		predictor variable	Statistical index	
			The standard error	beta		Criterion variable	
0/001	4/435	-	3/948	17/508	constant number	Step one	Quality of life
0/001	14/071	0/585	0/032	0/460	A sense of psychological coherence		
0/001	4/121	-	3/933	16/205	constant number	Step two	
0/001	10/694	0/512	0/038	0/403	A sense of psychological coherence		
0/003	2/968	0/142	0/063	0/186	Tolerate distress		

The findings in table (2) indicate that the beta coefficient increases the quality of life by 0.521 units for one unit increase in psychological coherence, and 142.0 units for one unit increase in distress tolerance. Increases by 0 units.

The prediction equation of the main research hypothesis can be presented as follows:

Quality of life = constant factor (14/205) + Feeling of psychological coherence (0.403) +Distress tolerance (0.186)

4. CHECKING THENORMALITYOF ERRORSIN THE REGRESSION MODEL OF THE MAIN HYPOTHESIS

One of the key and requisite assumptions for the suitability and appropriate correlation of the regression model with the research data is that the errors (i.e. residuals) conform to a normal distribution. In order to verify this, a normal probability plot is employed. When plotting (in ascending order) the residuals against their corresponding cumulative probability, they are expected to be distributed approximately in a linear pattern. Large residuals in a graph may indicate the presence of outlying points, which warrant further investigation. It is crucial to examine such points.

A normal probability diagram is used in regression tests to calculate t and F statistics, as well as confidence intervals, assuming normality of errors. Hence, significant deviations from normal distribution can impact the precision and validity of the findings. The outcome has significant implications. Furthermore, if the errors adhere to distributions with tails that are narrower or wider than the normal distribution, small modifications in the data can

greatly affect the least-squares fit. A straightforward approach to verifying the normality assumption of this line is highly probable due to the almost linear pattern, where there are no points far from the line. Consequently, the errors follow a normal distribution, making the proposed regression model a suitable fit for the research data.

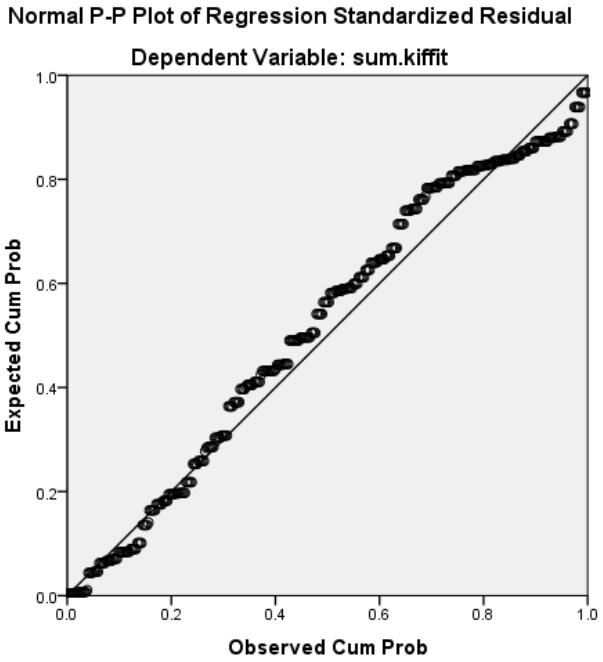

Fig. 1. Normal probability diagram of errors in the regression model of the main hypothesis

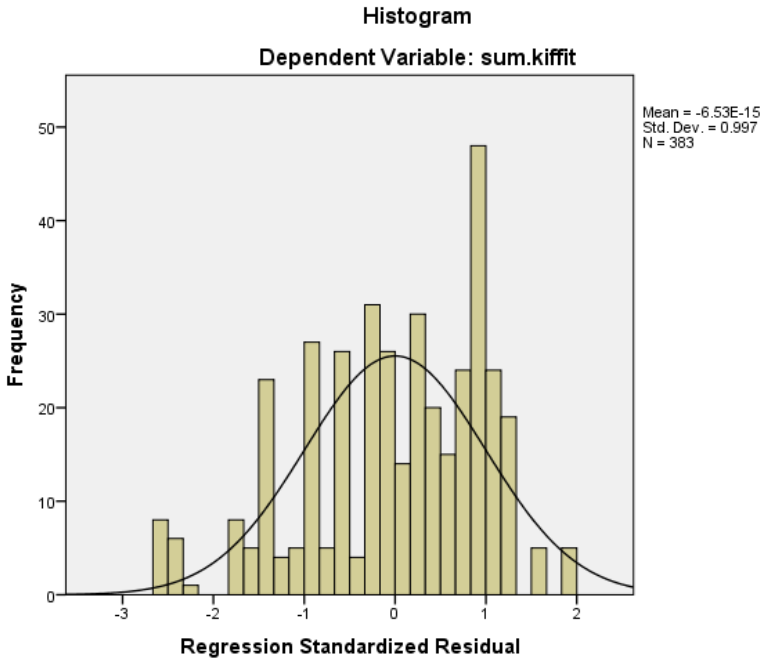

Fig. 2. The distribution diagram of residual values in the regression model of the main hypothesis

5. CONCLUSION

Today, the changes in lifestyles, social relations, and technological advances have led to various reactions among different societal groups, particularly students. While anxiety can be a significant factor, it may lead to negative outcomes if not properly managed through effective methods and mechanisms. Uncontrolled anxiety can negatively affect personal achievement and the resulting quality of life. Moreover, experiencing anxiety may cause mental disorders that may significantly impair individual and social functioning of this particular population. Individuals with lower levels of distress tolerance may struggle to tolerate even minimal amounts of anxiety, and heightened anxiety is linked to a decline in quality of life.

Due to the sensitive nature of their stage in Erikson's life cycle, which is characterized by a desire for independence and pursuit of intimacy and marriage, students may face challenging conditions. Additionally, the difficulties related to marriage, academic and career prospects, and the pressures of dormitory life such as loneliness, exacerbate stress levels in students in our country. This segment of society often experiences negative emotions, including depression, excessive anxiety, and anger. Due to the mentioned stressful factors, students experience increased levels of healing and distress which subsequently impacts their overall quality of life.

Individuals with a strong sense of psychological coherence exhibit increased adaptability and flexibility in managing complexities associated with their conditions. Antonovsky's theory proposes that psychological coherence reflects an individual's confidence in their ability to handle diverse situations, resulting in heightened self-control, independence, and positive health-related behaviors that improve overall quality of life. Reducing an individual's sense of control and mastery over life situations and the unpredictability of events can lead to weakened abilities to cope with stress and problems. This may result in the use of avoidance strategies and an increased risk of psychological helplessness, posing a threat to overall quality of life. On the contrary, believing that life experiences are predictable and controllable contributes to a greater sense of coherence and has a positive impact on quality of life. The research indicates a need for university counseling centers to address stress tolerance, conveying information on its negative impact on physical and psychological health, and providing essential training. Additionally, short-term trainings can be conducted in student dormitories during semesters and annual planning periods to enhance the mental well-being of the students during stressful times.

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