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Prediction the Mental Health based on Body Image Concern, Psychological Well-Being and Self-Concept among Female High School Students

Zahra Kachoei¹, Majid Asgharzadeh²

1. MA in General Psychology, Islamic Azad University, Garmsar Branch, Semnan, Iran

2. Assistant Professor of Educational Psychology, Farabi University, Tehran, Iran, Masgharzadeh22@gmail.com

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ABSTRACT

Objective: The current investigation sought to elucidate the predictive relationships between mental health, body image concern, psychological well-being, and self-concept among female adolescents enrolled in high schools within Tehran's District 21.

Methods: The statistical population for this investigation encompassed all female high school students attending girls' educational institutions in Tehran's District 21 during the year 2023. A sample size of 260 participants was extracted utilizing a cluster sampling methodology. For the purpose of data acquisition, this study employed the General Health Questionnaire, Body Image Concern Scale, Psychological Wellbeing Scale, and Multidimensional Self Concept Scale. To evaluate the research hypotheses, Pearson's correlation coefficient and multivariate regression analyses were implemented.

Results: The findings of the investigation indicated a statistically significant negative correlation between body image concern and mental health, a significant positive correlation between psychological well-being and mental health, as well as a significant positive correlation between self-concept and mental health among female high school students.

Conclusions: Collectively, the results substantiate the significance of motivational and emotional constructs in forecasting the mental health of female high school students and may offer valuable insights for developing effective interventions aimed at enhancing students' mental health.

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Introduction

The World Health Organization ([2016](#)) articulates health as a condition of comprehensive physical, psychological, and social well-being, rather than simply the negation of illness or disability. This characterization underscores that health transcends the mere absence of psychological disorders or impairments. The construct of mental health encompasses an intrinsic sense of well-being, self-efficacy, self-reliance, competitive capacity, intergenerational dependency, and the realization of one's intellectual and emotional potential, among other dimensions ([Bandyopadhyay, 2018](#); [Slemp & Vella-Brodrick, 2014](#); [Zahirinia & Khezri, 2023](#)). Mental health is delineated as “a state of well-being in which each individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to participate in his or her community” ([Ellison et al., 2018](#)). A pivotal concept in this discourse is the well-being health model. The notion of psychological well-being pertains to the affirmative thoughts and emotions through which individuals assess their lives as valuable and meaningful. Psychological well-being signifies a sense of health, comprehensive awareness, coherence, and integration across all dimensions of the individual and societal experience, which can be conceptualized as a broad and multifaceted construct ([Winefield et al., 2012](#)) and encompasses the elements of independence (self-determination, autonomy, and resilience in the face of social pressures), self-acceptance (recognition of both the positive and negative aspects of one's existence), mastery of the environment (optimal utilization of opportunities, creation of a conducive setting for personal needs and values), purposefulness in life (specific and well-defined objectives), personal growth (development accompanied by a sense of self-fulfillment), and ultimately, psychological well-being encompasses positive, warm, intimate, and satisfying relationships, alongside empathy for others ([Pfaffinger et al., 2022](#)). In light of the aforementioned, well-being can be underscored as a fundamental concept in the comprehension of mental health.

Our behavioral patterns are deeply embedded in our self-perception. It is imperative to note that such a self-image can be transformed into a constructive and effective representation through the enhancement of the individual's self-awareness concerning their capabilities, thereby augmenting their satisfaction and enjoyment—regardless of physical dissimilarities from peers ([Wu et al., 2021](#)). Should our self-concept solely consist of adverse characteristics, we are likely to encounter diminished self-esteem. Consequently, an effective self-concept would ideally represent a

synthesis of both positive and negative attributes ([Zhang et al., 2022](#)). When these three traits coexist, the individual's self-concept is deemed effective. However, if an individual, for instance, perceives themselves as an adept manager (which superficially may foster positive feelings), yet their projects fail to align with planned outcomes and their colleague's express dissatisfaction, the self-concept of such an individual is deficient in the initial characteristic—namely, the assimilation of experiential data. Likewise, equilibrium between pleasure and discomfort remains unestablished. The construct of self-concept is inherently neutral, devoid of intrinsic value. The perception individuals hold regarding their identity lacks inherent worth; it is contingent upon the valuations ascribed by the individual, which subsequently influences their feelings of worthiness or insignificance ([Xiang et al., 2023](#)). When individuals possess a comprehensive understanding of their own strengths and weaknesses, and critically assess their skills and talents while concurrently acknowledging their moral attributes, they arrive at the realization that, much like others, they also embody various strengths and weaknesses. This self-awareness equips them to contemplate strategies for mitigating their deficiencies through long-term planning and to capitalize on their strengths and talents. Indeed, the rectification of weaknesses alongside the establishment of specific objectives and the attainment thereof culminates in the enhancement of one's self-concept. A positive self-concept is undeniably pivotal for both individual and societal advancement and development; it encapsulates an individual's perception of their own unity and coherence, their self-image, the constellation of traits associated with them, the deductions they have drawn from self-observation across diverse contexts, and the distinctive pattern that characterizes them, collectively manifesting the notion of "self" ([Kong et al., 2022](#)).

The notion of body image was initially introduced by Schilder in 1950. He articulated the definition of body image from a psychological standpoint as "the mental representation of our body and its perceived appearance." Body image transcends a mere cognitive process, embodying desires, emotional orientations, and interpersonal interactions ([Grogan, 2021](#)). This cognitive preoccupation compels individuals to allocate substantial time and financial resources towards altering their physical appearance. The construct of body image is characterized by its complexity, encompassing two dimensions: body image investment and body image evaluation. Body image investment pertains to the extent of behavioral and cognitive significance individuals attribute to their bodies and their outward appearance ([Melissant et al., 2021](#)). Conversely, body image

evaluation is associated with the levels of satisfaction and dissatisfaction an individual experiences regarding their body and its appearance ([Fardouly & Vartanian, 2016](#)). Body image is conceptualized as the internal representations of the external characteristics of the body. The concept of body image is not static; rather, it possesses a dynamic quality. An individual's ideal body image is subject to transformation influenced by factors such as media portrayals, cultural norms, and peer attitudes ([Fardouly & Vartanian, 2016](#)). These shifts in perception are typically accompanied by corresponding alterations in emotions and thoughts, which may also precipitate behavioral changes in specific contexts ([Cash et al., 2002](#)). Adolescence represents a critical developmental stage during which individuals frequently confront significant challenges regarding their body image, as this period is marked by considerable physical and psychological transformations, including rapid increases in height and weight and the emergence of secondary sexual characteristics, all of which contribute to fluctuations in body image. In light of both internal and external disparities, the present investigation aims to forecast the mental health of female high school students based on their body image concerns, psychological well-being, and self-concept.

Material and Methods

The current investigation is quantitative regarding its applied objectives, and in terms of the nature and classification of data collected, it is categorized as a correlational study (a subtype of descriptive methodologies). In the context of the descriptive research methodology, the investigator delineates phenomena or examines relationships among variables without engaging in any form of manipulation. The procedure for gathering data was conducted as follows: by visiting secondary educational institutions for girls in Tehran's District 21 and identifying the target sample (260 individuals) of second-year high school females, questionnaires were administered, followed by the execution of the intended surveys and analyses on the obtained data. The statistical population for this research encompasses all second-year female students enrolled in girls' schools within Tehran's District 21 during the year 2016, amounting to approximately 800 individuals. The sample size consists of 260 second-year female students from girls' schools in Tehran's District 21 in 2016, selected through the method of cluster sampling. It is pertinent to mention that the Krejci and Morgan table was employed to ascertain the requisite sample size, indicating that for a population of 800 individuals, a sample of 260 individuals is necessary. Prior to engaging with the

questionnaires, participants were required to complete a comprehensive informed consent document. To evaluate the hypothesized model, multiple regression analysis was employed, and analyses were conducted utilizing SPSS-24.

Measurement tools

In this study, four questionnaires were used: General Health Questionnaire (GHQ), Body Image Concern Scale, the Ryff Psychological Well-Being Questionnaire, and Multidimensional Self Concept Scale.

General Health Questionnaire (GHQ): The General Health Questionnaire was first developed by [Goldberg and Hillier \(1979\)](#). This questionnaire can be considered as a set of questions that consist of the lowest levels of common symptoms of illness that exist in mental disorders. In this way, it can distinguish mental patients as a general category from those who consider themselves healthy. Therefore, the purpose of this questionnaire is not to achieve a specific diagnosis in the field of mental illnesses, but rather its main purpose is to differentiate between mental illness and health. The original questionnaire has 60 questions, but its shortened forms of 30 questions, 28 questions, and 12 questions have been used in various studies. The different forms of the General Health Questionnaire seem to have high validity and efficiency, and the efficiency of the 12-question form is almost the same as that of the 60-question form. The questions of the 28-question General Mental Health form examine the mental state of the individual in the last month and include symptoms such as abnormal thoughts and feelings and aspects of observable behavior that are based on the here and now situation. This questionnaire has 4 subscales: physical symptoms, anxiety, social dysfunction, and depression.

Ryff Psychological Well-Being Questionnaire: This Scale was designed by [Ryff \(2003\)](#) and revised in 2004. The short form of this questionnaire is derived from the original form with 120 questions. This version consists of 6 factors, which are: independence, mastery of the environment, personal growth, positive relationship with others, purpose in life, and self-acceptance. [Ryff and Singer \(2006\)](#) reported the correlation of this test with the 84-question scale of this questionnaire from 0.70 to 0.89. In Iran, [Michaeli Manee \(2010\)](#) obtained the internal consistency of this scale using Cronbach's alpha for the components of self-acceptance, environmental mastery, positive relationship with others, having a purpose in life, personal growth, and independence, respectively, equal to 0.51, 0.76, 0.75, 0.53, 0.73, and 0.72.

Body Image Concern Scale: This scale, formulated by [He et al. \(2017\)](#), serves as an item matrix. The item matrix pertaining to body image concerns encompasses the following dimensions: (a) nine items that assess the negative evaluation of and preoccupation with one's appearance; (b) four items that evaluate the distress arising from perceived appearance defects; (c) six items that examine feelings of embarrassment in public settings, as well as the sensation of being scrutinized by others; (d) seven items that pertain to repetitive behaviors or cognitive processes related to appearance; (e) seven items that focus on the avoidance of social engagement or physical interactions with others; (f) one item that addresses the preliminary exclusion of alternative mental disorders. The initial scale presents five response alternatives utilizing a five-point Likert format: 1 – very unlike me, 2 – moderately unlike me, 3 – somewhat like and unlike me, 4 – moderately like me, and 5 – very like me. [He et al. \(2017\)](#) indicated that the Body Image Concern Scale has demonstrated both structural validity and gender prevalence among Chinese university students. In the current investigation, the reliability of this scale was determined to be 0.71 through the application of the Cronbach alpha method.

Multidimensional Self Concept Scale: The Multidimensional Self Concept Scale (MSCS) is meticulously constructed to provide evaluative metrics relevant to the comprehensive self-concept as well as six domain-specific self-concept areas, which are essential elements in the social-emotional adjustment of youth and adolescents ([Bracken et al., 2000](#)). The MSCS was formulated in accordance with a theoretical framework proposed by Shavelson, Hubner, and Stanton. This framework articulates self-concept through seven distinct attributes: organization, multifaceted nature, hierarchical structure, stability, developmental trajectory, evaluative basis, and differentiation from alternative constructs. The MSCS encompasses six unique scales, specifically social, competence, affect, academic, family, and physical. Each scale is comprised of 25 items. The scales can be subjected to independent evaluation or assessed collectively. Raw scores are converted into standardized scores and percentile ranks. Descriptive classifications of scores are presented based on the degree of positive and/or negative self-concept manifested by the student across each of the six domain-specific scales as well as the aggregate scale. [Bracken et al. \(2000\)](#) asserted that this scale demonstrates commendable reliability and validity. In the current investigation, the reliability of this instrument was determined to be 0.75 through the application of the Cronbach alpha methodology.

Results

The descriptive statistics pertaining to the scores of the respondents are delineated in Table 1.

Table 1. Descriptive indices related to research variables

Variable	Mean	SD	Skewness	Kurtosis	S-W	P
Mental health	16.31	6.36	0.81	0.58	0.951	0.075
Body image concern	180.07	22.35	0.63	0.71	0.901	0.080
Psychological well-being	410.09	36.87	0.87	0.52	0.9156	0.077
Self-concept	136.80	21.79	0.69	0.92	0.971	0.088

In accordance with the findings presented in Table 1, the Shapiro-Wilk statistic did not reach a level of statistical significance; thus, there exists insufficient justification to dismiss the null hypothesis (which is predicated on the equivalence of the empirical distribution with the theoretical distribution). Consequently, the distribution of the participants' scores is inferred to conform to a normal distribution.

Table 2. The regression model result

Model	SS	DF	MS	F	P
Regression	1014.15	3	338.05	9.11	0.001
Residual	9493.23	256	37.08		
Total	10507.38	259			

According to Table 2, the linear regression model demonstrates statistical significance. Consequently, concerns regarding body image, psychological well-being, and self-concept are substantial predictors of the mental health status of female high school students. Table 3 illustrates the standardized coefficients associated with the predictor variables.

Table 3. The standardized coefficients of predictor variables

Predictors	Beta	P
Body image concern	-0.683	0.001
Psychological well-being	0.723	0.013
Self-concept	0.840	0.024

Table 3 illustrates that concerns regarding body image concern serves as significant negative predictor of mental health, while both psychological well-being and self-concept act as significant positive predictors of mental health.

Discussion

The empirical results indicated that concern regarding body image serves as significant negative predictor of mental health, while psychological well-being and self-concept emerge as significant positive predictors of mental health. These findings align with a plethora of prior research endeavors. For instance, [Khanjani and Bahadorikhosroshahi \(2014\)](#), in her scholarly work entitled Predicting General Health Based on Body Image, Stress, and Personality Traits, revealed a significant correlation between psychological stress and students' mental and overall health; however, no significant association was established between psychological stress and body image alongside three personality dimensions. Similarly, [Soltani et al. \(2017\)](#) indicated that there is an inverse relationship between body image and mental health, a finding that can help in better preparation of educational counseling programs. Mental health is characterized by an individual's aptitude to accurately perceive reality, effectively respond to its challenges, and adopt healthy coping strategies and lifestyle choices. An individual possessing mental health does not evade life's pressures but rather endeavors to acknowledge, accept, and surmount them through adaptive responses, thereby facilitating the continuity of life.

The results elucidated a significant negative correlation between the scales of psychological well-being and the general health questionnaire. As the level of psychological well-being escalated, a corresponding enhancement in general health was also observed. Given the substantial correlation identified between the dimensions of psychological well-being and general health, it can be inferred that these two constructs are interrelated, such that a modification in one variable typically corresponds with a change in the other variable. [Liu et al. \(2009\)](#) posited that all six dimensions of psychological well-being—autonomy (AU), environmental mastery (EM), personal growth (PG), positive relationships with others (PR), purpose in life (PL), and self-acceptance (SA)—as delineated by the Scales of Psychological Well-being Inventory (SPWB), exhibited a moderate negative correlation with depression and anxiety as quantified by the Hospital Anxiety and Depression Scale (HADS). Psychological well-being represents a complex and multifaceted construct. Individuals possessing well-being exhibit trust in others and derive pleasure from social interactions. Such individuals report a high degree of life satisfaction. They possess the conviction that life is both comprehensible and manageable, demonstrate acceptance of life's challenges, and exhibit an interest in work and activities, alongside the capacity to form close and intimate

relationships with others, as well as the inclination to cultivate such connections, including the capacity to love others. This social-relational dimension of well-being encompasses the fluctuations inherent in social and interpersonal relationships and interactions. Individuals in good health maintain a connection with their emotional experiences and internal states, enabling them to acknowledge or articulate these feelings.

Moreover, a significant portion of an individual's mental and emotional health is contingent upon their self-concept. The perception individuals hold of themselves is predominantly influenced by their past experiences, encompassing both failures and successes, as well as the opinions of others and the feedback derived from the actions of those around them. [Shang et al. \(2017\)](#) posited that the selection of a major, whether it was made voluntarily or involuntarily, exhibited a substantial impact on the metrics pertaining to mental health and self-concept among students. The self-concept scores demonstrated an inverse relationship with the scores derived from the SCL-90 assessment. The regression analysis revealed that the triadic components of self-concept—namely, moral self, social self, and personal self—were capable of forecasting the mental health status of nursing undergraduates. A self-concept that is grounded in experience, and consequently aligned with reality, serves a vital and constructive function. Mental health establishes a foundation for the enhancement of intellectual and communicative competencies, fostering emotional development, adaptability, self-esteem, and self-concept. The successful execution of cognitive functions, coupled with the engagement in constructive activities, the cultivation of appropriate interpersonal relationships, the capacity to adapt to changes, and the effective management of life's adversities are all ramifications of having robust mental health.

In addition to the insights garnered, the current study encountered several limitations. Among the limitations identified are the extensive number of inquiries within the questionnaires, which resulted in prolonged implementation duration, albeit without compromising the accuracy of the participants' responses, and the presence of numerous variables that are beyond the researcher's influence, potentially impacting the study's success. Ultimately, it is recommended that this research be replicated in diverse communities to facilitate comparative analysis of the results. In light of the conducted research, which underscores the beneficial effects of mental health on self-concept and psychological well-being, and conversely, recognizes the potential for the

development of psychological well-being, it is advisable to organize educational workshops aimed at families within the framework of family education, focusing on mental health education to augment the opportunities for enhancing and fostering psychological well-being in individuals. Furthermore, future investigations on this topic should consider an expanded sample size and a broader community in order to examine the results with greater depth.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Islamic Azad University.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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