

Predicting General Well-Being Based on Resiliency Protective Factors and Demographics in Adolescents: The Mediating Role of Emotional Stability

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Abstract

Background: Well-being is an important indicator of overall health during adolescents and later life.

Objectives: The present study aimed at investigating the relationship between resiliency protective factors and demographics due to the mediating role of emotional stability on general well-being of adolescents.

Methods: In this cross sectional study, 331 students were selected by stratified random sampling from high schools of Firozabad from February 2015 to December 2015. Data were collected using the Adolescent General Well-Being Questionnaire, Resilience Protective Factor Inventory, and Emotional Stability Scale, and analyzed applying structural equation modeling using the LISREL 8.80 software.

Results: The indices of model fitness showed good fitness (X^2 : 11.04, df: 4, $P = 0.90$; RMSEA: 0.06; GFI: 0.91; AGFI: 0.91; NFI: 0.90; CFI: 0.93; and IFI: 1). Resiliency protective factors and demographics had direct effects on general well-being (0.65, $P < 0.01$; -0.17, $P < 0.01$). In addition, resiliency protective factors (0.68, $P < 0.001$) and demographics (-0.20, $P < 0.01$) had a direct effect on emotional stability. In this model, resiliency protective factors and demographics indirectly effect general well-being via the mediation of emotional stability (0.76, $P < 0.001$).

Conclusions: The assumed theoretical model was fitted to the data and resiliency protective factors. Demographics and emotional stability were significant determinants in predicting general well-being of adolescents, which must be considered when developing programs to improve the well-being of adolescents.

Keywords: Well-being, Resilience, Demography, Mental Health

1. Background

Adolescent well-being is a major factor for later development and self-transcendence in all aspects of life (1, 2). Adolescents' well-being is associated with appropriate development, engagement at school and academic achievement, optimistic attitudes, and adaptive coping strategies, and is a major protective factor against health adversities (3-5). General Well-Being (GWB) in adolescents is related to higher resiliency, lower psychopathology, and higher stability and adaptability (6, 7). Well-being as a multidimensional phenomenon has integrated bio-psycho-social-spiritual dimensions (7-9). In addition, well-being is a subjective experience including emotional and cognitive dimensions, which are achieved as a result of evaluation of multiple aspects of life (10). Adolescent GWB, as a global concept, includes the ability to acquire values, knowledge, skills, experience, interpersonal relationships, and access to fundamental services that enable an adolescent to participate in the community and affairs, avoid risky behav-

iors, earn income, and stay healthy (11, 12). Multiple factors affect the well-being of adolescents (13, 14). Identification of factors affecting the well-being of adolescents is important for designing appropriate interventions.

Resiliency protective factors have a major role in emotional well-being (15). Hjemdal et al. (2006) defined resiliency protective factors as the following processes: Individual attributes and external support systems that contribute to favorable consequences despite distress and adversity (16). Resilience is an important factor in the development and continued growth, and well-being of children and adolescents (17). Resiliency protective factors foster development and maintain health performance in adverse conditions (18, 19). Resiliency may reduce negative emotions and increase life satisfaction (15, 20).

Also, demographic factors, including background characteristics, socio-cultural values, and socioeconomic status effect well-being (21, 22). In a study by Sweeting and Hunt (2014), psychological well-being in school-aged

adolescents was correlated with socio-demographic factors (23). Desirable socioeconomic status, higher level of literacy, and appropriate social status are associated with high levels of GWB (22).

Furthermore, personality traits play a decisive role in physical and mental well-being (3). Emotional stability is one of the most striking personality traits associated with GWB (24, 25). Emotional stability refers to the capacity to remain relaxed or comfortable, when an individual encounters distress and adversities (24, 26). Studies have shown that people with adverse socioeconomic factors and non-resiliency experience negative emotions and emotional instability that in turn results in diminished well-being (15, 27, 28). People with emotional instability have inefficient strategies to solve interpersonal problems, leading to a reduction in their GWB (2, 26).

The assumed theoretical model is designed based on theoretical evidence, which indicates that resiliency protective factors and demographics with the mediating role of emotional stability are effective in anticipation of GWB. Most studies focus on the direct role of these variables in forecasting GWB. Therefore, indirect role of resilience and demographics on well-being has not been studied in regards to psychological mediators. Hence, in order to address this gap, direct and indirect role of these factors in predicting GWB were studied in this investigation.

Providing an integrated model of psychological, demographic, and developmental factors is essential for explanation of GWB of young people. Inadequate researches on this topic and the need of tailored programs for the adolescent population necessitate conduction of such study. The hypothetical model in this study was based on theoretical models of well-being in adolescents including Eryilmaz (2012) (29), Antaramian et al. (2010) (6), Soutter et al. (2014) (30), and Rodriguez-Fernandez et al. (2016) (31). These models were designed to predict or to explain the impact of demographic, socio-cultural and psychological factors on well-being. In continuation of these studies, the current study was set to identify the role of resiliency protective factors and demographics regarding the mediating role of emotional stability in anticipation of GWB in adolescents. In fact, the main goal of this study was to determine the direct and indirect role of these factors in predicting general well-being in adolescents. The hypothesized model regarding the relationships of the study variables is presented in Figure 1.

2. Objectives

The current study aimed at identifying the role of resiliency protective factors and demographics regarding the mediating role of emotional stability in anticipation

of general well-being in adolescents. In line with this goal, appropriateness of fit of the data was considered in the model for direct and indirect effects of resiliency protective factors and demographics with the mediating role of emotional stability in predicting GWB.

3. Methods

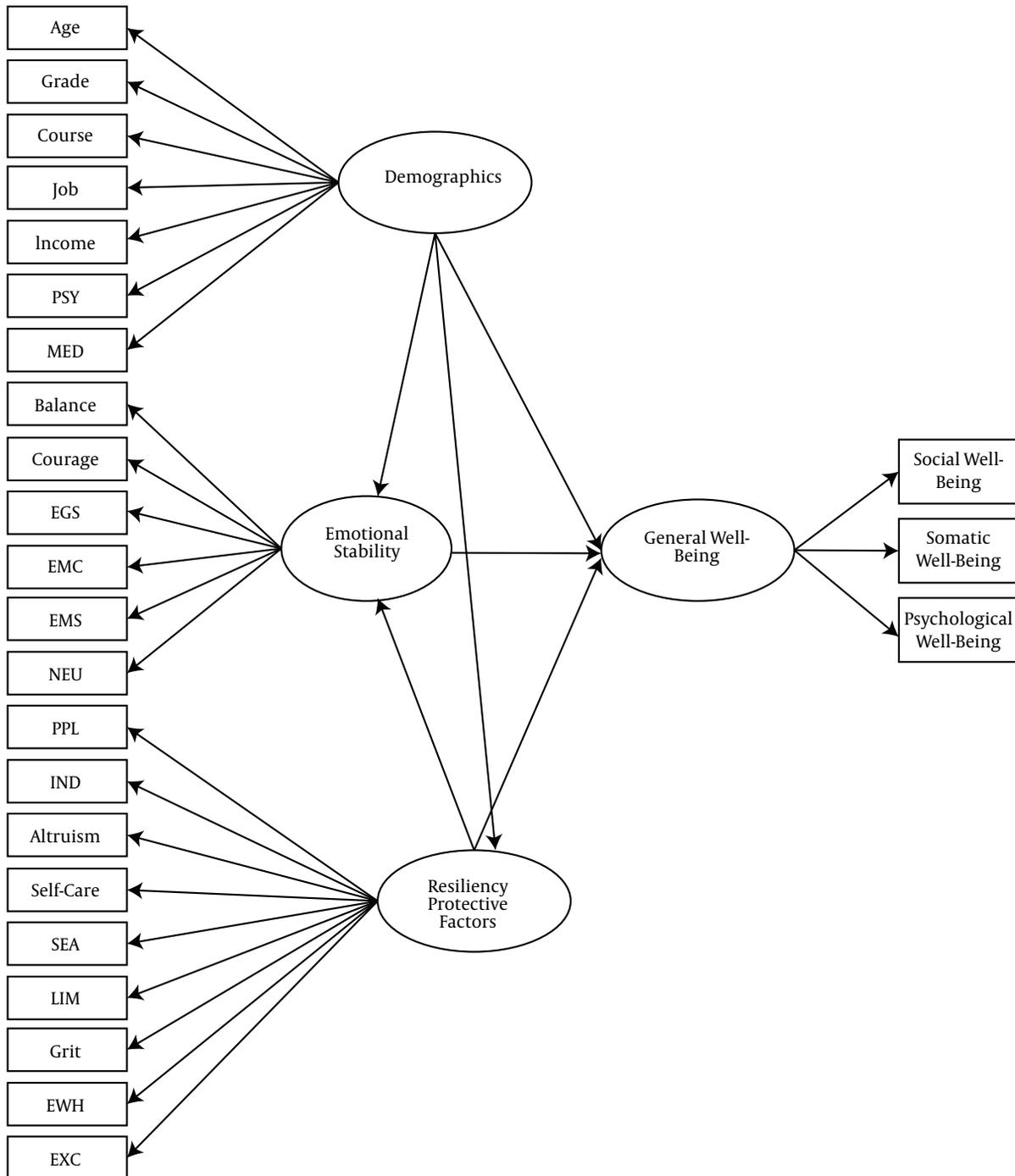
A retrospective cross sectional study was performed at the high schools of Firozabad, Iran from 17th of February, 2015 to 12th of December, 2015. The statistical population consisted of high school students aged 14 to 20. The initial sample included 347 students selected by the stratified random sampling method. Stratified random sampling is a sampling procedure wherein the entire statistical population is divided to various subgroups known as strata based on shared characteristics, then participants are randomly selected to form the final sample proportionally from the various strata (32). Sixteen questionnaires were excluded from the study because of incomplete filling and the exclusion criteria. Data were collected from a final sample of 331 participants including 139 males (42%) and 192 females (58%). Based on the model parameters and sampling formula in structural equation modeling, this sample size was sufficient. Inclusion criteria were as follows; age range of 14 to 20 years, psychological health, proper recognition of the study, and informed consent. Exclusion criteria were as follows; partially completed research questionnaires, failure at school and drop-outs, major medical illnesses, and/or major psychiatric disorders. The exclusion criteria were assessed via medical records and psychiatric history of high schools' health centers and counseling centers. Failure and drop-outs were assessed through educational records at the high schools. Demographic characteristics were studied, and the intrusive variables including fatigue, unwilling to answer, hurry, and carelessness were controlled in the study administration and data analysis.

3.1. Measures

3.1.1. Adolescent General Well-Being Questionnaire-Short Form (AGWB)

Adolescent General Well-Being Questionnaire-Short Form (AGWB) was developed by Colombo (1984) (33). It has 39 items and 3 social, physical, and mental/psychological dimensions. This questionnaire assesses the adolescents' GWB, which contains 19 positive statements (e.g. I like myself) and 20 negative statements (e.g. frequently fearful or worried). The scoring of AGWB is based on a 5-point Likert scale in the range of 1 (strongly disagree) to 5 (strongly agree). Scores range from 39 to 195, and higher scores point out higher GWB. Negative statements have reversed scoring. Regarding construct validity, total score has a strong

Figure 1. The Hypothetical Model of Direct and Indirect Relations Among Resiliency Protective Factors and Demographics With General Well-Being According to the Mediating Role of Emotional Stability



Note: PSY = Psychopathology, Med = Medical disease, EGS = Ego-strength, EMC = Emotional Control, EMS = Emotional Sensitivity, NEU = Neuroticism, PPL = Positive Perspective on life, IND = Independence, SEA = Self-acceptance, LIM = Life Meaningfulness, EWH = Experience with hardship, EXC = External connections

relationship with social ($r = 0.67$), physical ($r = 0.85$), and mental ($r = 0.97$) factors. Cronbach's alpha coefficient of AGWB questionnaire has been reported as 0.92 in adolescents aged 14 to 18 (33). Also, in samples of adolescents in the age range of 12 to 14 and 15 to 17, Cronbach's alpha coefficients were 0.95 and 0.93, respectively (34). The internal consistency with Cronbach's alpha in this study was 0.91.

3.1.2. Resilience Protective Factor Inventory (RPFI)

The Resilience Protective Factor Inventory (RPFI) was constructed by Bolton (2013) (35) and is a 67-item instrument with 9 subscales including positive perspective in life, independence, altruism, self-care, self-acceptance, meaningfulness, grit, experience with hardship, and external connections. The scoring is based on a 7-point Likert scale in the following range; 1 (strongly disagree), 2 (disagree), 3 (somewhat disagree), 4 (undecided), 5 (somewhat agree), 6 (agree), and 7 (strongly agree). Scores range from 67 to 469, and higher scores show better resilience. This inventory has content validity and convergent validity regarding the same instruments, and the reliability of the total scale, calculated through Cronbach's alpha coefficient, in various studies was 0.72 to 0.94 (35). Also, Cronbach's alpha coefficients for the internal consistency of the subscales of the instrument were 0.63 in experience with hardship and 0.89 in self-acceptance (35). The reliability values calculated with Cronbach's alpha coefficients for positive perspective on life, independence, self-care, meaningfulness, external connections, grit, altruism, and self-acceptance were 0.80, 0.76, 0.73, 0.75, 0.80, 0.79, 0.89, and 0.89, respectively, and the Cronbach's alpha coefficient for previous experience with hardship was acceptable at $r = 0.63$ (35). In the present study, Cronbach's alpha was 0.90 for this inventory.

3.1.3. Emotional Stability Scale (ESS)

The Emotional Stability Scale (ESS) was developed by Cohen (2013) (36) and consisted of 33 items in 6 attributes including balance, courage, ego-strength, emotional control, emotional sensitivity, and neuroticism. Participants responded to this instrument in a 5-point Likert scale in a range of 1 (strongly disagree) to 5 (strongly agree). The scores ranged between 33 and 165, and higher scores indicated higher emotional stability. This scale has appropriate face and content validity. The Cronbach's alpha coefficient was 0.82 for ESS (36). The scale in this study had good internal consistency (Cronbach's alpha, 0.89).

3.2. Procedure

The study was approved by the Research Committee of Higher Educations of the Faculty of Psychology and Educational Sciences, Semnan University. In addition, the

Research Ethics Committee of the Faculty of Psychology of Semnan University reviewed and approved the study. Firstly, necessary coordination with the Firozabad Organization of Education and Training was conducted. Then, the data were collected by 3 trained interviewers, with individual style using the same method. All participants completed informed consent forms. In addition, the study was performed according to research ethical considerations including confidentiality, possibility to leave the study at any stage, and comfortable conditions during the study.

3.3. Statistical Analysis

The data were analyzed using descriptive statistics by SPSS-19 and structural equation modeling with LISREL 8.80. Structural equation modeling is used to examine multiple and indirect relationships between variables in the model of the study.

4. Results

The participants were aged 14 to 20 years and the age (mean \pm SD) was 16.48 ± 1.10 . Background and demographic data are presented in Table 1. Primarily, these presented background and demographic data inform the readers about these conditions in the statistical population. Secondly, the role of these variables as exogenous factors has been studied in structural equation modeling. Background and demographic data are presented in Table 1.

The mean and standard deviation values and correlation among the variables are presented in Table 2. Protective resiliency factors and GWB have the highest mean values, respectively, while emotional stability has the lowest mean. Emotional stability has the highest correlation with GWB ($P < 0.01$). Also, there is a similar pattern for protective resiliency factors with GWB ($P < 0.01$). Age has a weak and non-significant correlation with other variables ($P > 0.05$).

Structural equation modeling was applied using the LISREL 8.80 software. Before the analysis, the status of data and assumptions of analysis were checked. First, univariate outliers were checked using a rectangular graph (Box Plot) by SPSS-19, showing 8 univariate outliers replaced by the data mean. Mahalanobis statistic was used to assess multivariate outliers, and the results showed that multivariate outliers were not present in the data. In addition, kurtosis and skewness of data were analyzed using SPSS-19, indicating that the amounts of kurtosis and skewness did not exceed $1 \pm$. The assumption of independence was checked and confirmed by Durbin-Watson statistic ($DW = 1.817$). In addition, multi-collinearity was calculated using

Table 1. Background and Demographic Variables of the Study Sample (n = 331)

Variables	Categories	N (%)
Gender	Male	139 (42)
	Female	192 (58)
Educational grade in high school	First Year	42 (12.7)
	Second year	106 (32)
	Third year	111 (33.5)
	Pre-university stage	72 (21.8)
Educational course	Mathematics	5 (16)
	Empirical sciences	85 (25.7)
	Humanistic	73 (22.1)
	Vocational	38 (11.5)
	Work training	40 (12.1)
	Others (general)	42 (12.7)
Familial socioeconomic status (monthly family outcome)	Higher than \$1500	21 (6.3)
	\$1000 - \$1499	99 (29.9)
	\$500 - \$999	189 (57.1)
	Lower than \$499	22 (6.6)
History of serious psychiatric disorders	Non-exist	324 (97.9)
	Exist	7 (2.1)
History of serious medical diseases	Non-exist	316 (95.5)
	Exist	15 (4.5)

Tolerance statistic and Variance Inflation Factor (VIF), and the results showed that none of the tolerance values were smaller than 0.1, and no VIF value was larger than 10. Therefore, based on 2 indicators of tolerance and VIF, collinearity was not observed in the data. After a preliminary analysis and before examining the hypothesized structural model, the measurement models of variables were analyzed to determine whether indicators construct the final pattern of the latent variable and have good fitness with the observed data. According to measurement models, gender, income, history of psychopathology, and the history of medical diseases were not indicators for demographics ($P > 0.05$). Other indicators were confirmed in the measurement models of demographics, resiliency protective factors, emotional stability, and GWB, at a significance level of 0.05 (Figure 2).

For the estimation of the structural model, Maximum Likelihood Method, Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Comparative Fit Index (CFI), Normed Fit Index (NFI), Goodness of Fit Index (GFI), and Adjusted Goodness of Fit Index (AGFI) were used. Several cut-off points have

been proposed by experts to fit the model to the data. For example, an amount equal to or less than 0.07 for RMSEA and SRMR and amount equal to or higher than 0.90 for CFI and NFI indicate adequate model fitness (36). In addition, GFI and AGFI higher than 0.90 show goodness of fit. The RMSEA and SRMR lower than 0.05 indicate better fit and smaller than 0.01 imply a very good fit (37). Fitness indices for final model are presented in Table 3. The findings suggest that the fitness indices indicate optimal fitness of data-model. In addition, comparison of fit indices represents a good fit with the data-model (Table 3).

With regards to the suitability of the fitness indices, except for SRMR, the direct and indirect effects of each variable on well-being were considered (Table 4).

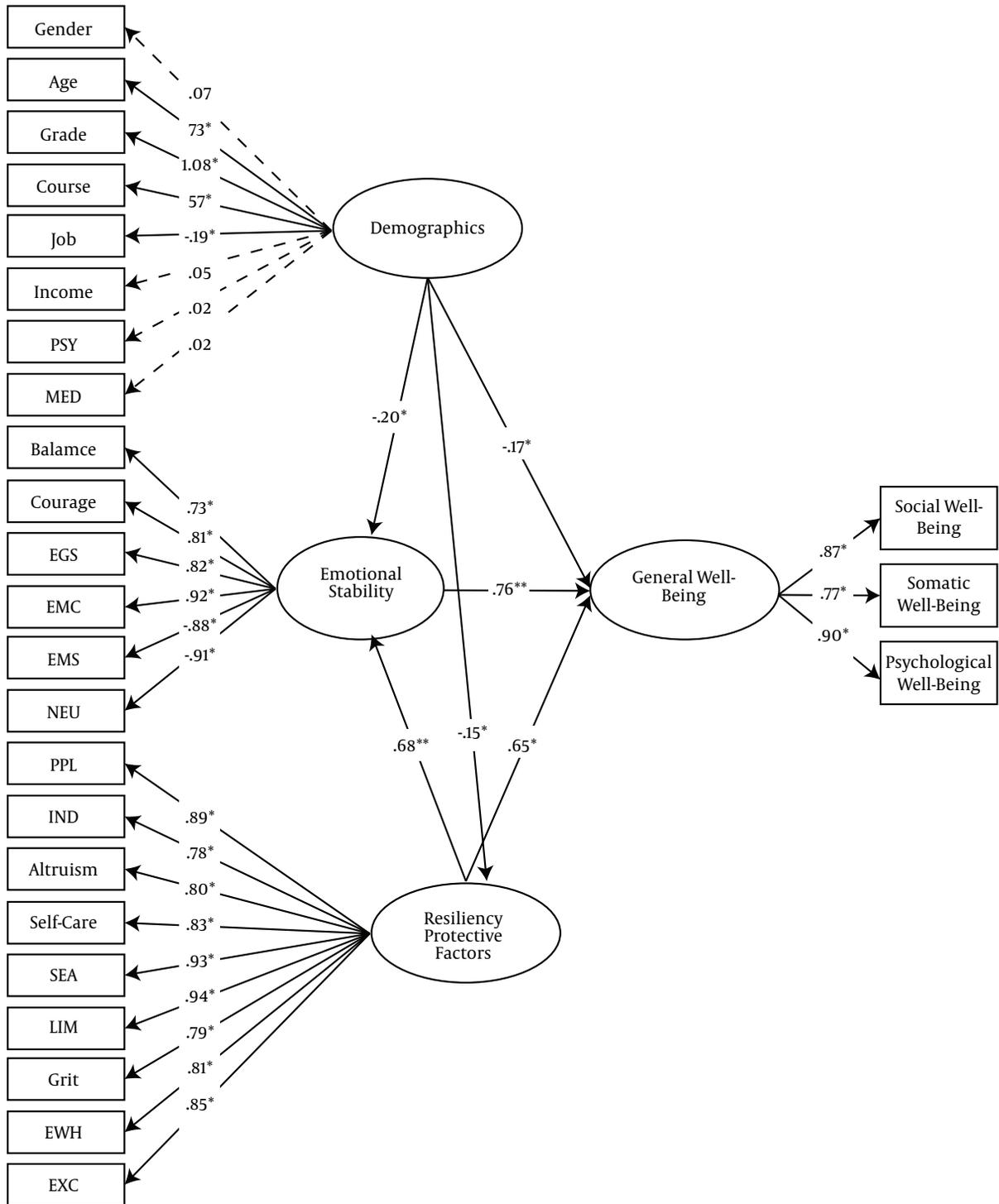
Before investigating the mediating role of emotional stability, the results of the model show that demographics have a direct effect on GWB (-0.17, $P < 0.024$). Also, emotional stability had a direct effect on GWB (0.76, $P < 0.001$). In addition, resiliency protective factors had a direct effect on GWB (0.65, $P < 0.001$). On the other hand, demographics had a direct effect on emotional stability (-0.20, $P < 0.018$). Also, resiliency protective factors had a direct effect on emotional stability (0.68, $P < 0.001$). In addition, the direct effect of demographics on resiliency protective factors was -0.15 ($P < 0.031$). Furthermore, demographics and resiliency protective factors were indirectly associated with GWB by the mediation of emotional stability (0.76, $P < 0.001$).

Furthermore, all t values were greater than ± 1.96 , indicating that all direct and indirect path coefficients were significant. According to the information provided in Table 4, the proposed research hypotheses are approved. The integrated final measurement and structural model of the study are presented in Figure 2.

5. Discussion

Structural equation modeling was used to test the present model. Findings of the structural equation model revealed that resiliency protective factors are directly involved in anticipation of GWB. Regarding the predictive role of resiliency protective factors on general well-being, the findings are consistent Mak, Ng, and Wong (2011) (38), Di Fabio and Palazzeschi (2015) (39), and Ager (2013) (17). According to Guilera et al. (2015) (40) and Blatny et al. (2015) (41), resilience is a dynamic and adaptive process in response to unfavorable conditions of life, and it is a sign of psychological well-being and healthy character. In addition, the results showed that resiliency protective factors indirectly affect GWB through emotional stability. This finding is consistent with the studies of Eley et al. (2013) (18), Mak et al. (2011) (38), and Guilera et al. (2015) (40).

Figure 2. The Final Model of the Study (Standard Coefficient Paths Reported)



*P<0.01, **P<0.001; unconfirmed paths (not significant)

Table 2. Mean (Standard Deviation), Correlation, and Reliability Coefficient of the Variables

Variables	R								
	1	2	3	4	5	6	7	8	9
M ± SD ^a	134.54 ± 22.59	360.57 ± 48.07	107.43 ± 16.52	16.48 ± 1.10	-	-	-	-	-
1. General well-being^b									
2. Protective resiliency factors^b	0.59 ^c								
3. Emotional stability^b	0.71 ^c	0.50 ^c							
4. Age^b	-0.08 ^{NS}	0.04 ^{NS}	-0.06 ^{NS}						
5. Educational grade (Lower; First Year)^d	-0.11 ^c	-0.04 ^{NS}	-0.11 ^c	0.73 ^c					
6. Educational course (Mathematics)^d	-0.02 ^{NS}	-0.04 ^{NS}	0.03 ^{NS}	-0.33 ^c	-0.48 ^c				
7. Gender (male)^d	-0.13 ^c	0.11 ^e	-0.21 ^c	0.03 ^{NS}	0.14 ^c	0.11 ^e			
8. FSS (Lower than \$499)^d	-0.13 ^c	-0.09 ^e	-0.08 ^{NS}	0.06 ^{NS}	0.15 ^c	-0.11 ^e	-0.13 ^e		
9. HSPD (Non-exist)^d	0.16 ^c	-0.09 ^e	0.15 ^c	-0.04 ^{NS}	0.14 ^c	-0.12 ^e	-0.18 ^c	-0.05 ^{NS}	
10. HSMD (Non-exist)^d	0.06 ^{NS}	0.03 ^{NS}	0.07 ^{NS}	-0.02 ^{NS}	0.0 ^{NS}	-0.10 ^e	-0.03 ^{NS}	0.03 ^{NS}	0.17 ^e

Abbreviations: FSS, Familial socioeconomic status; HSPD, History of serious psychiatric disorders; HSMD, History of serious medical diseases; NS, Not significant.

^aM: Mean, SD: Standard deviation.

^bPearson correlation.

^cP < 0.01.

^dPoint biserial correlation.

^eP < 0.5.

Table 3. Fit Indices of the Modified Model (N=331)

Fit indices	X ²	df	X ² /df ^a	RMSEA	CI (90%) RMSEA	GFI	AGFI	NFI	CFI	IFI	SRMR	P-value
Criterion	P > 0.05	3-5	> 0.05	< 0.07	> 0.90	> 0.90	> 0.90	> 0.90	> 0.90	> 0.90	> 0.0	> 0.05
Final model	11.04	4	2.76	0.067	(0.031; 0.078)	0.91	0.91	0.90	0.93	1	0.086	0.90

^aChi-square test is calculated by maximum likelihood method.

Table 4. Direct, Indirect, and Total Effect Coefficients of the Final Model

Effect	Path	Direct effect (t)	P value	Indirect effect (t)	P value	Total effect (t)	P value
Exogenous on endogenous	Demographics on general well-being	-0.17 (-2.95)	0.024 ^a	-0.13 (-2.38)	0.029 ^a	-0.17 (-2.95)	0.022 ^a
	Resiliency protective factors on general well-being	0.65 (10.90)	0.001 ^b	0.52 (7.93)	0.004 ^b	0.65 (10.90)	0.001 ^b
	Demographics on emotional stability	-0.20 (-3.28)	0.018 ^a	-0.10 (-2.42)	0.037 ^a	-0.20 (-3.28)	0.020 ^a
	Resiliency protective factors on emotional stability	0.68 (10.66)	0.001 ^b	-	-	0.68 (10.66)	0.001 ^b
Endogenous on endogenous	Emotional stability on general well-being	0.76 (9.85)	0.001 ^b	-	-	0.76 (9.85)	0.001 ^b
Exogenous on exogenous	Demographics on resiliency protective factors	-0.15 (-2.47)	0.031 ^a	-	-	-0.15 (-2.47)	0.030 ^a

^aP < 0.05.

^bP < 0.01.

In line with these findings, Exenberger and Juen (2014) believed that personality traits affect the process of adaptation and psychological and physical well-being through the effect on the interpretation of environmental events (15).

In conclusion, it seems that resiliency promotes general well-being as an inner growth source with the me-

diation of emotional stability as an important personal-ity trait. It can be concluded that resiliency protective factors and emotional stability collaboratively effect general health and well-being. Resiliency as a first level factor strengthens emotional stability as a second level factor in numerous conditions and in turn contributes to the establishment of GWB as a major effect. Ager (2013) showed that

higher resiliency is associated with optimism and sense of well-being (17). Bolton (2013) claimed that resilient individuals have a high tolerance to experience severe psychological distresses, and even with harmful experiences, they maintain well-being and normal development (35). It can be argued that resilient individuals have higher well-being because of using more creative and optimistic procedures in handling problems.

The findings of this study showed that demographics have a direct impact on GWB. In addition, the results showed that demographics indirectly affect GWB through emotional stability. These findings are consistent with several studies (21, 23, 42) and inconsistent with other results (28, 43). In general, there are controversial findings on the role of demographic factors in well-being. These contradictory findings could be due to cultural-ecological differences, different research methodologies, various statistical populations, and data collection methods. However, there is a high consensus on the important impact of demographic factors on GWB. In this regard, Smith et al. (2015) believed that demographics are infrastructures for public health (22). Therefore, unfavorable demographics, as background factors, are directly or indirectly, effective in reducing GWB and overall health.

Consistent with Di Fabio and Palazzeschi (2015) (39) and Morris et al. (2015) (26), emotional stability had a significant direct impact on GWB in this study. Vitters (2001) mentioned that emotional stability as a main personality trait is an individual resource and important influential factor in prediction of well-being (24). To explain these findings, people with emotional stability have more positive emotions due to the use of appropriate strategies and understanding of their emotions when dealing with anxieties and distresses, and therefore, experience low physical and psychological distress. In addition, consistent with Blatny et al. (2015) (41), emotional stability as a durable personality trait is a major moderating and/or mediating factor for reducing the effects of environmental inequalities and socio-demographic adversities on well-being.

The current study had a few limitations. First, this study was a cross sectional study, limiting the identification of causal relationships. Second, understanding the precise causal relationship with structural equation modeling was difficult. Third, the research data were obtained using self-report questionnaires completed by participants pretending to offer answers, and ultimately affecting the results. Fourth, the research population was limited, hence, further studies are required to generalize the findings.

Mixed methods (quantitative-qualitative design), longitudinal study design, interviews, and behavioral observation or measurement are recommended for data collec-

tion to overcome the so-called limitations. In addition, numerous adolescent samples in several target populations should be examined. Resiliency, demographics, and emotional stability should be considered in developing programs to improve the well-being of adolescents.

The assumed theoretical model fitted the data and showed that resiliency protective factors and demographics, with the mediating role of emotional stability, as main factors have a significant role in predicting GWB in adolescents. These results are beyond previous research results and accompanied by important implications. The results further revealed that the predictive roles of resiliency and demographic factors on GWB were direct, and indirectly effected GWB through emotional stability. These findings have significant implications for the design of tailored interventions to promote GWB of adolescents. Designing, modification, and tailoring the promotion models of general well-being among adolescents based on the resiliency, emotional stability, and demographic factors are practical implications of this study. It is suggested for researchers to design trials to tailor programs based on strengthening resilience and emotional stability to improve adolescents' general well-being.

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Footnotes

Authors' Contribution: Data collection and preparation of the initial version of the manuscript was done by Sayed Soghra Hossaini. Isaac Rahimian Boogar designed and conceptualized the study, reviewed the research literature, analyzed the data, and interpreted of the findings. Mahmood Najafi contributed to data analysis and interpretations. All authors collaborated in the writing, reviewing, and revising the manuscript, and they cooperatively approved the submitted article.

Conflicts of Interest: The study was conducted without any conflict of interest.

Funding/Support: The study did not receive any financial support from private and governmental organizations or agencies.

Ethical Considerations: Ethical issues regarding plagiarism, misconduct, double publication, informed consent, redundancy, and data fabrication were completely monitored by the authors. The authors noticed that the study was conducted without any conflict of interest. Moreover, the study did not receive any financial support on the behalf the private and governmental organizations or agencies.

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