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The Modeling Factors Affecting the Psychological Distresses in Female-headed Households

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ABSTRACT

Objective: The aim of this study is to investigate a structural equations model concerning the factors influencing the psychological distress experienced by female heads of households.

Methods: A total of 1200 female heads of households aged between 25 and 40 years were involved in this research. Data collection tools included a demographic information form, a self-developed psychological adversity questionnaire for female household heads, and a mental health questionnaire. The data collected were analyzed using SPSS-24 software, and Structural Equation Modeling (SEM) was conducted through the Amos software.

Results: The goodness-of-fit values for the model examining factors contributing to mental adversities fell within an acceptable range. The analysis revealed that depression, resilience, and anxiety were the most influential variables impacting the psychological distress experienced by female heads of households. Nonetheless, no significant associations were found between psychological adversities and educational level, place of residence, family structure, and smoking habits.

Conclusions: The outcomes support the concept that the psychological well-being of parents can lead to positive outcomes on the academic and emotional success of students.

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Introduction

One of the most prominent symbols of the 21st century is the evolution of the family structure and the diversity of its forms (Kim et al., 2010; Mortelmans & Defiore, 2018). Female heads of households are perceived as a vulnerable segment of society, encountering numerous challenges both at the individual and macro levels in contrast to male heads of households, impacting their overall well-being, primarily stemming from reasons such as Divorce, death, addiction, or disability of the spouse, abandonment by migrant men, or lack of care, who are typically recognized as the head of the household. Evidently, female heads of households experience a diminished quality of life attributed to specific financial, social, and psychological adversities. This decreased quality of life renders female heads of households more susceptible to psychological and social detriments compared to other societal members (Lafta et al., 2012). Depending on the catalysts prompting structural shifts in the family unit, the performance of female heads of households may exhibit significant disparities concerning socio-economic status and health-related results. Furthermore, the extent of constraints faced by female heads of households is heavily shaped by prevailing social norms, contextual elements, and internal dynamics within the household.

The prevailing perspective on financial capacities suggests that female-headed households rank among the most vulnerable and disproportionately represent the poorest households. Nevertheless, the notion that female heads of households are inherently more disadvantaged than their male counterparts has been contested. Critics argue that female heads of households encompass a diverse spectrum and not all fall under the impoverished category, given that poverty is multifaceted and subject to subjective interpretations. Consequently, there exists a necessity to delve deeper into the behaviors and repercussions pertaining to the well-being of women and children within these family settings (Sad, Qatas et al., 2022).

Stropholino and Bernardi (2017) posit that employment plays a dual role in the lives of these women; serving as a pivotal mechanism to bolster the resilience of these households while concurrently, in the absence of adequate childcare facilities, engendering additional strain and role conflicts for them.

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Sadr Nabavi et al. (2021) have demonstrated that women heads of households confront adverse stereotypes in their day-to-day social interactions, fostering feelings of privacy insecurity. Meanwhile, Yousefi Lebani et al. (2020) highlighted that the solitude experienced by female heads of households renders them susceptible to various forms of abuse by men, encompassing sexual and non-sexual (financial, psychological) exploitation, exacerbating their vulnerabilities. The narratives of these women commonly feature physical and mental fatigue arising from poverty and the burdensome responsibility of securing livelihood.

Sadr Nabavi et al. (2021) posit that the adverse circumstances experienced by women in the past and present, along with uncertainties about the future, have established a foundation for diminishing feelings of joy. Consequently, coping mechanisms have emerged in the form of perceptions of inequality, depression, and mental strain. These manifestations ultimately result in sentiments of injustice towards oneself and societal exclusion.

The challenges faced by female-led households encompass a wide array of economic, psychological, social, political, judicial, and legal aspects. Due to the complexity and breadth of these dimensions, it is unfeasible to address all of them within the confines of this particular study. Hence, the research focuses specifically on female heads of households in Tehran and assesses their psychological well-being.

Hence, this current research endeavors to pinpoint the factors that influence the psychological distress experienced by female heads of households under the care of the welfare organization. Notably, this study introduces a novel model delineating the factors that contribute to psychological distress among female heads of households in Tehran province.

Materials and Methods

The research aimed to explore the factors influencing psychological distress among female heads of households within the population. A random sampling technique was employed for data collection, utilizing online database forms tailored to the study's objectives. These forms were disseminated to a wide audience through various platforms such as WhatsApp and Telegram, with the expectation that they would be completed and returned. Researchers individually shared the forms with an average of 500 individuals, totaling 1,500 participants. The data collection progress

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was closely monitored over a two-week period, resulting in the collection of 1200 forms. The instruments used for data collection included a demographic information form, a psychological distress scale specific to female household heads (developed by the researchers), and a mental health questionnaire (GHQ).

The demographic characteristics information form serves to gather data on the socio-demographic attributes of the subjects.

The researcher-developed questionnaire (AFH) was created to assess the psychological challenges faced by female heads of households. Comprising 58 items measured on a 5-point Likert scale, this tool aims to capture six factors: social support, resilience, psychological well-being, irritability, exposure to stress, and depression. Exploratory factor analysis of the questionnaire data revealed the extraction of six factors explaining 82.48% of the total variance. The questionnaire's validity was assessed through content validity, construct validity, and confirmatory factor analysis, all of which demonstrated satisfactory validity metrics. Furthermore, the scale exhibited good reliability with a Cronbach's alpha value of 0.83.

The utilization of the General Health Questionnaire, a Mental Health Scale, involves a self-report method within clinical settings to monitor individuals afflicted with mental disorders. Comprising 28 questions, this questionnaire encompasses four subscales focusing on physical symptoms, anxiety, social dysfunction, and depression. Responses are rated on a 4-point scale ranging from 0 to 3, with higher scores indicating greater mental health challenges. The overall reliability coefficient stands at 0.55, while the reliability coefficient for sub-tests falls between 0.42 and 0.47. The tool exhibits a Cronbach's alpha coefficient of 0.94 and an average question correlation of 0.35. Validity assessments employed factor analysis and discriminant analysis, yielding alpha coefficients for depression (0.89), social function (0.89), anxiety (0.85), and physical symptoms (0.71).

Data analysis

The analysis of study data involved the utilization of SPSS24 and Amos software. Initial data validation in SPSS24 encompassed checks for missing data and outliers, followed by assessments for data normality and variance homogeneity. Descriptive statistics were computed utilizing SPSS 42 software, while Structural Equation Modeling (SEM) was employed to identify factors influencing psychological distress. Compared to alternative analytical approaches, SEM is a robust

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method as it assumes a causal structure amid latent variables measurable through observable variables. This technique incorporates various multivariate statistical methods like regression, factor analysis, and analysis of variance (covariance). Within the structural equation modeling framework, one or more linear regression equations depict the relationships between internal constructs and external constructs.

Within structural equation modeling, meticulous delineation of parameters concerning variable relationships in the model is imperative for model construction. Comprising the measurement model and the structural model, the analysis of structural equation modeling commences with the measurement model. In the measurement model, correlations with unspecified directions between variables are ascertainable through defining latent variables. Conversely, the structural model dictates the direction of each relationship between latent variables and variables not representing latent variables, fixing certain parameters. Establishing the model for structural equation modeling necessitates determining parameters associated with relationships between latent variables, all indicator variables, and even error variances within the model.

Fit indices were utilized for assessing the adequacy of fit of the model within structural equation models. Various fit indices exist to assess the model's fit. Interpretation of fit statistics involves the utilization of specific threshold values to ascertain the model's acceptability, aiming to minimize disparities between observed and theoretical data in the structural equation model. The significance of fit lies in determining the extent to which relationships in the model align with the studied data.

Commonly employed fit indices include χ^2/df or the ratio of chi-square to degrees of freedom, root mean square error of estimate (RMSEA), goodness of fit index (GFI), and Adjusted goodness of fit (AGFI). Moreover, standardized root mean square residual (SRMR), adaptive fit index (CFI), normal fit index (NFI), and Tucker-Lewis index (TLI) are frequently utilized as well.

While the chi-square to degrees of freedom ratio ideally should not exceed 3-4, certain studies have demonstrated values reaching up to 5. A value below 2 is desirable, whereas one lower than 5 is considered acceptable. As chi-square can be influenced by sample size, alternative fitting values have been explored. The root mean square error of estimation serves as a value for hypothesis testing, assuming uniform distribution of correlation, with an anticipated value below

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0.08 (a value below 0.05 signifies good model fit, while between 0.05 and 0.08 indicates average fit). A value less than 0.05 is deemed an even stronger indicator of consistency.

The goodness of fit index (GFI) enables comparison of two distinct models tested within the same sample. Traditionally, GFI has been employed for model fit assessment. GFI and AGFI indices, proposed by Yurskog and Sorbom (1989), are independent of sample size, with a required value of 0.9 or above for GFI. Adjusted Goodness of Fit Index (AGFI) is an alternative goodness of fit index, equivalent to utilizing mean squares in lieu of sum of squares in the numerator and denominator of GFI. GFI and AGFI range between zero and one, with acceptable values being 0.9 or higher. Standardized root mean square residual (SRMR) is another indicator of model fit, with expected values below 0.08, similar to RMSEA.

Results

The average age of the sample was 28.6 ± 10 years. 71.1% of the women group had children. Among these people, 21.2% of married people had experienced (disability or addiction of spouse), and 78.8% of single people had experienced (divorce and death of spouse). According to the level of education, university graduates were dominant 52.2. Also, 54.1% had no history of smoking, exploratory factor analysis was used to extract the valid items of the used questionnaires.

The single-factor structure of the first level of the AFH scale consisting of one dimension and 6 items was tested by discriminant function analysis (DFA). Considering that the data follows a normal distribution, the maximum likelihood estimation method was used. The factor loadings of all items in the scale varied between 0.46 and 0.73. The measurement model for the AFH scale was validated according to the fit indices obtained in the study, as a result of the resulting data (Table and figure 1).

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Table 1. AFH scale fit indices

Row	Indices	Value
1	χ^2	46.17
2	P-value	P>0.05
3	$\left(\frac{\chi^2}{df}\right)$	3.55
4	RMSEA	0.04
5	RMR	0.02
6	NFI	0.98
7	TLI	0.97
8	CFI	0.98
9	GFI	0.99
10	AGFI	0.98

These results also showed that the data obtained in the study are consistent with the predicted theoretical structure of the GHQ scale. The structure of the GHQ scale, consisting of one dimension and 4 items, was tested with the first-level one-factor diagnostic function analysis and the maximum likelihood estimation method was used. The factor loadings of the scale items ranged from 0.76 to 0.83 and all the items in the main scale were analyzed and the fit indices of the scale were examined ((Table and figure 2).

Table 2. GHQ scale fit indices

Row	Indices	Value
1	χ^2	36.23
2	P-value	P>0.05
3	$\left(\frac{\chi^2}{df}\right)$	3.29
4	RMSEA	0.04
5	RMR	0.01
6	NFI	0.99
7	TLI	0.99
8	CFI	0.99
9	GFI	0.99
10	AGFI	0.98

The good fit values obtained as a result of the first-level diagnostic function analysis show a perfect fit with the structure of the proposed one-factor model. These findings showed that the data obtained in the study are consistent with the proposed theoretical structure of the GHQ scale. The reliability of the scales used in the research was evaluated using Cronbach's alpha. Cronbach's

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alpha values obtained for the scales were 0.78 for the AFH scale and 0.92 for the GHQ scale. These values showed that the reliability of the scales is in the normal range (Table 3).

Table 3. Reliability of AFH and GHQ scales

Scale	N of items	Cronbach's alpha
GHQ	28	0.78
AFH	58	0.92

In order to predict the factors that cause mental adversities, a basic structural model was created and the goodness of fit of this model was examined. The mean score of AFH scale and the variables of social support, resilience, psychological well-being, irritability, ability to face stress and depression were included in the model. The goodness of fit values of the model showed that the minimum goodness of fit values required for a valid model (table 4).

Table 4. Fit indices in the initial model

Row	Indices	Value
1	χ^2	41.16
2	P-value	P<0.05
3	$\left(\frac{\chi^2}{df}\right)$	11.9
4	RMSEA	0.08
5	RMR	0.26
6	NFI	0.84
7	TLI	0.83
8	CFI	0.85
9	GFI	0.89
10	AGFI	0.86

When the standard regression weights of the variables in the initial prediction model and the importance of their contribution to the model were examined. As shown in the initial model, the fit indices of the model are low. For this reason, the variable "smoking status" was removed from the analysis and a new structural model was created in order to obtain a new model with higher goodness-of-fit values compared to the current model or to increase the goodness-of-fit of the model with the data set.

When the revised model for predicting the factors affecting psychological adversities and goodness of fit values was examined, it was found that goodness of fit values is at a desirable level and design of the model was finalized. AFH scale, social support (t=15.923, p<0.001), resilience (t=5.866, p<0.001), psychological well-being (t=8.193, p<0.002), emotional distress (t=6.107,

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p<0.001) , exposure to stress (t=3.296.p<0.003), depression (t=4.216.p<0.002) were found to have a significant effect on psychological adversities. In the AFH scale, after examining the subscales of social support, resilience, psychological well-being, irritability, exposure to stress, and depression, it was found that they have a significant effect on psychological adversities. According to the standardized regression coefficients in the model, among those independent variables that were determined to be significant, it was found that the effect of depression variable is more important (0.80) than other independent variables (table 5).

Table 5. The fit indices in the revised model

Row	Indices	Value
1	χ^2	535.62
2	P-value	P>0.05
3	$\left(\frac{\chi^2}{df}\right)$	74.4
4	RMSEA	0.05
5	RMR	0.12
6	NFI	0.95
7	TLI	0.95
8	CFI	0.96
9	GFI	0.95
10	AGFI	0.94

Discussion

In this investigation, the acquired data were deliberated in the context of existing literature through an analysis of the variables influencing the emotional strain experienced by female heads of households, a prevalent and critical societal irregularity. The levels of resilience, irritability, and depression are pivotal factors acting as catalysts in the emergence of psychological hardships among female heads of households. The findings resulting from the data examination in this study, alongside those from related research, highlight a significant correlation between stress management capabilities, anxiety stemming from societal expectations, and the psychological turmoil encountered by female heads of households.

Numerous scholarly inquiries into the mental challenges faced by female heads of households indicate a higher prevalence of psychological disorders among these women compared to their counterparts and men. Approximately one in every four women grapples with anxiety disorders

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and depression. Psychological adversities tend to affect women more frequently across various cultures, often attributed to the inherent physical and psychological aspects of the female gender. This investigation revealed an elevated susceptibility to mental health disorders among female heads of households. Factors such as stress coping mechanisms, individual constitution, personality traits, and socio-cultural context render women more vulnerable to psychological adversities.

The outcomes derived from the current research underscore a decline in the likelihood of developing psychological issues with advancing age. Existing scholarly works frequently note that psychological adversities are more prevalent in younger individuals and diminish as individuals grow older. Conversely, the diminishing risk of psychological challenges associated with aging can be construed as a natural consequence of developing more efficient coping mechanisms to address age-related issues, alongside a reduction in adverse life events and the maturation of personality over time. Age is recognized as a protective element against the onset of various forms of mental adversities. Furthermore, leading a solitary existence has been identified as an additional risk factor for psychological distress, indicating that individuals who are single may encounter psychological hardships more frequently than their married counterparts. Investigations into the risk elements of psychological adversities often point towards a lack of intimate relationships and feelings of isolation as contributing factors to the development of psychological challenges.

In this research, it was found that educational status does not influence the psychological distress of female heads of households. Some studies in the literature have reported a strong relationship between educational status and psychological adversities in female heads of households, with those having lower education levels being at greater risk. The inconsistency in results may be attributed to societal changes and higher education levels. The data from this research indicated that female heads of households have lower social support, often live alone, and are therefore at a higher risk of psychological distress. This aligns with other studies showing higher psychological distress among single individuals.

Family type and smoking status were also examined but did not significantly contribute to psychological distress among female heads of households. Similar findings have been reported in other studies, with researchers determining that smoking does not affect the psychological distress

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of these women. After reviewing the data on risk factors for psychological distress in female heads of households, the results of this study are consistent with another research.

The study highlighted depression as a crucial factor in psychological distress among female heads of households. Additionally, variables such as resilience, irritability, depression, ability to cope with stress, and psychological well-being were identified as important parameters in explaining their psychological adversities.

Young age appears to be strongly related to psychological distress in female heads of households, with single individuals being more vulnerable than married ones. These findings underscore the need for regular mental health evaluations for female heads of households to identify those prone to anxiety and depression. Establishing and strengthening psychological support centers is crucial for timely treatment of psychological issues. Furthermore, incorporating recreational, religious, and sports programs for women receiving welfare support can help prevent psychological problems. Overall, increasing social support is an effective measure in reducing environmental stressors.

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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. The author 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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