Research Paper
The Relationship Between Lifestyle and Attachment to God With Depression Mediated by Quality of Life Among Mothers of Children With Intellectual Disabilities

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ABSTRACT

Background: Mothers often bear a heavy psychological burden in society because of their disabled children. As mothers often spend more time taking care of these children, they are exposed to different types of stress and mental disorders. The present study aims to investigate the relationship between lifestyle and attachment to God with depression with the mediating role of Quality of Life (QoL) in mothers of children with intellectual disabilities (IDs) in Tehran, Iran.

Methods: This descriptive-correlational study was conducted using path analysis. The statistical population comprised all the mothers of children with IDs in Tehran, Iran in 2020. Among the study population, a total of 213 mothers were selected as the sample via convenience sampling. The research instruments included the Beck depression inventory-II (BDI-II), the attachment to God questionnaire, the lifestyle assessment inventory (LSI), and the World Health Organization quality of life questionnaire-short form (WHOQoL-BREF). The proposed model was evaluated via structural equation modeling (SEM), and the indirect relationships were tested via bootstrapping.

Results: The results showed a direct and significant relationship between attachment to God and QoL (β=0.40, P=0.001), and between lifestyle and QoL (β=0.31, P=0.001). There was a negative relationship between attachment to God and depression (β=-0.40, P=0.001), in addition to QoL and depression (β=-0.37, P=0.001). The results of the indirect path analysis showed the mediating role of QoL in the relationship between attachment to God and lifestyle with depression (P=0.001).

Conclusion: The results confirmed the proposed model's goodness of fit; therefore, this model can expand our understanding of the factors affecting depression in mothers of children with IDs to design preventive programs to mitigate their stress and depression.

Keywords: Lifestyle, Depression, Attachment to God, Quality of Life, Intellectual disability, Mothers

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1. Introduction

Children with intellectual disabilities (IDs) constitute about 3% of the population, and many families experience the heavy emotional burden of taking care of them [1]. The most serious challenges in these families are marital conflicts, a sense of guilt about having a disabled child, avoiding future pregnancy, and the considerable educational and medical expenses incurred on these children. Mothers often bear a heavy psychological burden in society because of their disabled children [2]. As mothers often spend more time taking care of these children, they are exposed to different types of stress and mental disorders. Given their poor psychological conditions, these mothers experience a higher level of stress and psychological problems compared to mothers of normally developing children, which may exacerbate depression [3, 4]. As a major type of mood disorder, depression (also known as unipolar disorder) is a highly prevalent neuropsychological disorder that alters functions [5]. Depression is characterized by at least five of the following symptoms: loss of interest or pleasure in all or most daily activities, considerable weight loss, a change in appetite, insomnia, fatigue or listlessness, lack of concentration, poor decision-making, recurrent suicidal ideation, and preoccupation with death [6, 7].

Meanwhile, hopelessness is a major factor associated with depression, and a large body of research indicates that similar to depression, it can predict suicidal ideation. Mothers' psychological problems can increase the risk of psychological disorders in children with IDs and other members of the family [8]. Having a disabled child shatters mothers' dreams and expectations of having a healthy child, thereby afflicting them with depression and other psychological and emotional problems. A mother suffering from depression and other psychological and emotional problems cannot behave properly with her disabled child. Excessive love and support or rejection of the child can seriously impact the disabled child's personality development [9].

Defined as an individual's relationship with and emotional tendency toward God, attachment to God is a strong factor in alleviating mothers' depression. In this type of attachment, God is viewed as a haven that can be found in every situation [10]. Disabled children and adolescents' attachment behaviors toward their parents demonstrate many behavioral characteristics, such as communicating with God through prayer and protesting to Him for forsaking them. People who have internalized God as a haven are more capable of coping with problems. Evidence shows that correct religious beliefs can meet many basic human needs and fill moral, emotional, and spiritual gaps [11, 12]. Sarabadani, Tafreshi, and Janbozorgi [13] reported that the level of spiritual mental development was negatively related to depression, anxiety, stress, and self-concept, while God's image was significantly related to depression, anxiety, and stress.

Lifestyle is another key health factor in mitigating the depression level of mothers of children with IDs. Health-promoting behaviors are essential for everyone, especially for mothers of disabled children [14]. Lifestyle is a general way of life and behavioral patterns that may benefit or harm health. It includes nutrition, eating habits, leisure, smoking, physical activity, and the use of healthcare services [15]. Healthy and unhealthy lifestyles respectively promote or harm health [16]. Despite the expansion of healthcare services for mothers and children, mothers of children with IDs face numerous life-threatening problems. Liu et al. [17] reported that lifestyle is closely related to the occurrence of depressive symptoms, and lifestyle intervention is a new way to prevent and treat depression. Sarris et al. [18] suggested that several lifestyle factors are associated with depression; in particular, habits involving increased screen time and poor sleep and dietary pattern partly exacerbate depression.

Another factor that may influence depression in mothers of children with IDs is their quality of life (QoL) [19]. The World Health Organization (WHO) has defined QoL as an individual's perception of their position in life in the context of the culture and value systems in which they live. This position is associated with the individual's goals, dreams, criteria, and priorities. The definition encompasses three components of objective welfare and satisfaction, functional status, and contextual factors, considering that the first two overlap with mental health [20]. QoL is characterized by physical health, mental health status, degree of independence, social relationships, and personal beliefs, along with the relationship between these factors and the environment [21, 22].

Various studies have confirmed the relationship between lifestyle and depression [18-23]. Cabello et al. [23] showed that unhealthy lifestyles and depression are positively related in emerging countries. As mothers play a fundamental role in maintaining the family's psychosocial balance, the problems faced by mothers of children with IDs must be resolved through effective planning. In the present research, the theoretical model is

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to examine the direct relationship between the variables of attachment to God to depression and QoL, lifestyle to depression and QoL, and QoL to depression in mothers of children with IDs. In addition, the model examines the indirect relationship between attachment to God and depression with the mediating role of QoL. Meanwhile, the study of the indirect relationship between lifestyle and depression with the mediating role of QoL in mothers of children with IDs is among the theoretical models of the present study. Therefore, based on the issues outlined above, the main objective of the current study is to investigate the relationship between lifestyle and attachment to God with depression with the mediating role of QoL in mothers of children with IDs.

2. Methods

This descriptive correlational study explored the relationships between different variables through Structural Equation Modeling (SEM). The statistical population comprised all the mothers of children with IDs in Tehran, Iran (2020) who were conveniently selected. The inclusion criteria were providing written informed consent for participation, 27 to 50 years of age, and a minimum education level of middle school. The exclusion criteria were failing to respond to all the questions and unwillingness to participate. A hyperlink to the questionnaires was sent to the mothers. In SEM, the number of parameters is calculated based on the number of direct paths, exogenous variables, and error variances. To test the model, a minimum of 15 participants per parameter is required. Therefore, a sample of 213 eligible mothers was selected. Regarding ethical considerations, the participants provided their informed consent letter in which the information confidentiality was ensured. The study was approved by the Ethics Committee of Islamic Azad University, Ahvaz branch (Code: IR.IAU.AHVAZ.REC.1400.046).

Research instruments

Beck Depression Inventory-II

The Beck depression inventory-II (BDI-II) was developed by Beck in 1961 and has a long (21-item) and a short (13-item) form which demonstrate a correlation of 0.97-0.89. The 13-item form was used for the present study. The scores reflect a wide spectrum of symptoms' severity, and each set of questions is scored from 0 to 3 (from mild to severe). Khoshvaght et al. [25] reported the Cronbach α coefficient of 0.81 for the questionnaire. In this study, the Cronbach α was obtained at 0.83.

Attachment to God Questionnaire

The attachment to God questionnaire (short form) is a 16-item self-report measure developed by Ghobari and Haddadi Koohsar [26]. The items are scored on a 5-point Likert scale from totally disagree (1) to totally agree (5), and the total score ranges from 16 to 80. Ghobari and Haddadi Koohsar [26] reported the Cronbach α of 0.89 for the questionnaire. In this study, the Cronbach α coefficient was obtained at 0.88.

Lifestyle Assessment Inventory

The lifestyle assessment inventory (LSI) is a 20-item inventory developed by Miller and Smith in 2002. The items are scored on a 5-point scale from almost always (1) to almost never (5), and higher scores indicate a less desirable and healthy lifestyle. Fazel et al. [27] reported the Cronbach α of 0.75 for the questionnaire. In this study, the Cronbach α coefficient was obtained at 0.81.

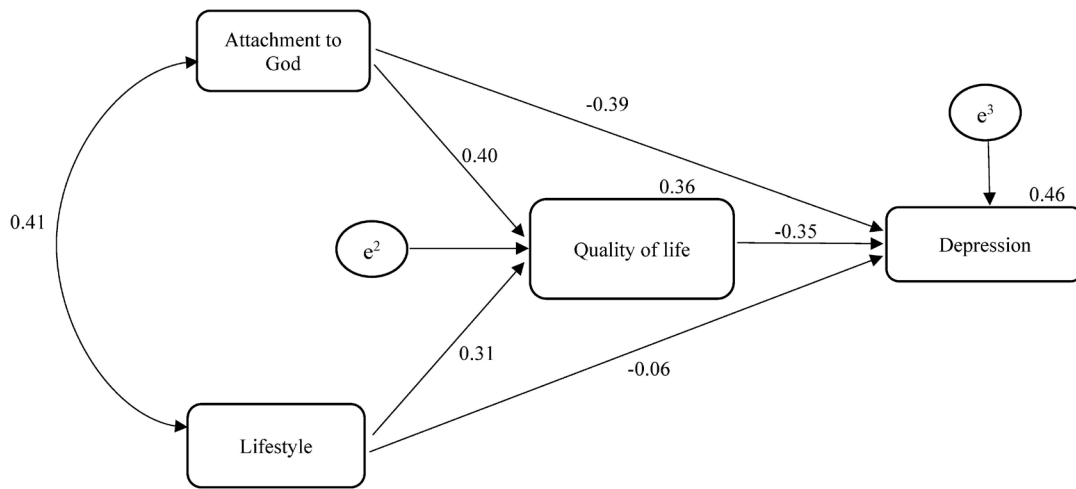### World Health Organization Quality of Life Questionnaire--Short Form

The short form of the World Health Organization quality of life questionnaire (WHOQoL-BREF) includes 26 items that assess health in physical, mental, social, and physical environment dimensions. The scores indicate the general QoL and the public health levels. This questionnaire was developed by WHO experts in 1989 by modifying the items of the 100-item questionnaire. The items are scored on a 5-point scale from never (1) to very often (5). Items 3, 4, and 26 are scored inversely. The final score ranges from 26 to 130. Dehdashti Lesani et al. [28] reported the Cronbach α of 0.87 for the questionnaire. In this study, the Cronbach α coefficient was obtained at 0.89.

Statistical analyses

The Pearson correlation coefficient and SEM were applied to test the relationships between the variables in the AMOS software, version 25, and the SPSS software, version 27.

3. Results

The participants included 213 mothers of children with IDs, with the Mean±SD age of 31.15±4.07 years. Table 1 provides the descriptive statistics, including the Mean±SD, and the Pearson correlation coefficients of the studied variables. Accordingly, all the variables were significantly correlated. Figure 1 displays the ini-

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Figure 1. Proposed model of the mediating role of QoL in the relationship between attachment to god and lifestyle with depression
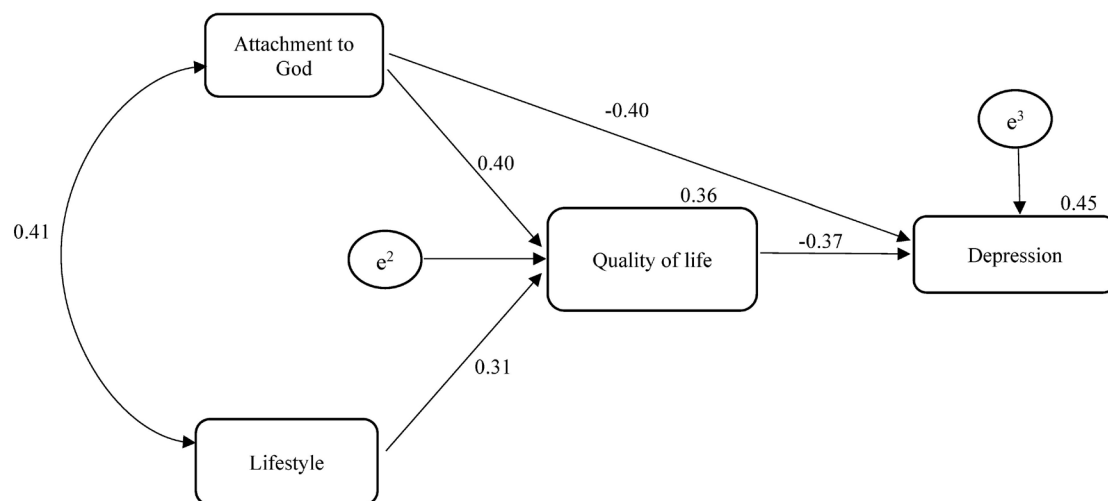
tial model explaining depression based on attachment to God, lifestyle, and QoL.

The data were first checked for outliers, normal distribution, assumptions of path analysis, collinearity, and the variance inflation factor (VIF). A tolerance index of greater than 0.10 for attachment to God (0.689), lifestyle (0.742), and QoL (0.642), along with a VIF of less than 10 for attachment to God (1.450), lifestyle (1.349), and QoL (1.557) confirmed the assumptions. The independence of errors was also confirmed with a Durbin-Watson statistic (1.76) in the range of 1.5 to 2.5.

According to Table 2, the RMSEA of 0.448 indicates that the initial model needs modifications. As the initial model was saturated (i.e., all the possible paths were

drawn), the Chi-square and other indices could not be computed. After removing one path (from lifestyle to depression), the model was desaturated and the software could compute the indices. Figure 2 illustrates the final model. An RMSEA of 0.001 suggests the final model's goodness of fit.

Table 3 provides the findings related to the path coefficients' estimations for testing the direct hypotheses. According to the results, there was a direct and significant relationship between attachment to God and QoL (β=0.40, P=0.001), in addition to lifestyle and QoL (β=0.31, P=0.001) in mothers of children with IDs. There was a negative relationship between attachment to God and depression (β=-0.40, P=0.001), and between QoL and depression (β=-0.37, P=0.001) in

Figure 2. Final model of the mediating role of QOL in the relationship between attachment to god and lifestyle with depression

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Table 1. Mean±SD and the Pearson correlation coefficients of the studied variables

Variables	Mean±SD	1	2	3	7
1-Depression	20.14±9.96	1			
2- Attachment to God	79.43±22.93	-0.60**	1		
3- Lifestyle	62.61±17.74	-0.38**	0.41**	1	
4- QoL	70.472±23.62	-0.58**	0.53**	0.47**	1

** P<0.01.

mothers of children with IDs. The results in Table 3 showed no significant direct relationship between lifestyle and depression.

Table 3 shows the significance of the indirect path from attachment to God to depression mediated by QoL (β=-0.083, P=0.001). The indirect path from lifestyle to depression mediated by QoL was also significant (β=-0.083, P=0.001).

4. Discussion

This study aimed to investigate the relationship between lifestyle and attachment to God with depression with the mediating role of QoL in mothers of children with IDs in Tehran, Iran. Overall, all the direct paths, except for the path from lifestyle to depression, were significant. The indirect paths to depression were also significant through QoL. The first finding was the direct relationship between attachment to God and depression. Sarabadani, Tafreshi, and Janbozorgi [13] similarly reported the negative relationship of the level of spiritual mental development with depression, anxiety, stress, and self-concept, as well as the significant relationship of God's image with depression, anxiety, and stress.

A healthy relationship with God promotes a healthy relationship with oneself. This may explain the negative relationship between attachment to God and the daily stress experienced by mothers of children with IDs. A correct God-image can strengthen faith and promote an individual's health. Individuals with low attachment to God are sensitive to losses and experience this attach-

ment negatively because of their excessive focus on self and determinism. Therefore, they are prone to depression, stress, anxiety, and psychological disorders. For these people, attachment to God which is formed during childhood acts like a punitive parent who criticizes and punishes instead of supporting and soothing. These people cannot establish a logical link between their mistakes and God's punishment [13]. Therefore, people with poor attachment to God attribute harsh events to God's punishment and automatically look for His vengeance behind any event. Naturally, they do not feel good about God, do not see themselves as worthy of God's and other people's love, suffer from low self-esteem, and feel worthless and incompetent, which exacerbates psychological disorders and depression.

Moreover, no significant positive relationship was found between lifestyle and depression. This finding is inconsistent with the results of van Lee et al. [17]. Previous studies investigated the relationship between attachment to God and depression via correlation analysis and regression, demonstrating a significant relationship. However, SEM was used in this study because of a mediating variable. Although the direct relationship between attachment to God and depression was not significant, the indirect relationship between lifestyle and depression mediated by QoL was significant. In other words, attachment to God indirectly affected depression through QoL. A healthy lifestyle improves the family's function and mothers' mental health. Mothers who enjoy a healthy lifestyle usually have the proper nutrition, clothes, and exercise. When mothers have adequate physical and mental health, their vitality is transferred to the entire

Table 2. Fit indicators of the initial and final model

Fit Indicators	χ^2	df	(χ^2/df)	RFI	IFI	TLI	CFI	NFI	RMSEA
Initial model	-	-	-		-	-	-	-	0.448
Final model	0.88	1	0.88	0.98	1.00	1.00	1.00	0.99	0.001

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Table 3. Path coefficients of direct and indirect effects between research variables in the initial and final model

Paths	Initial Model		Final Model	
	β	P	β	P
Attachment to God to depression	-0.39	0.001	-0.40	0.001
Lifestyle to depression	-0.05	0.348	-	-
Attachment to God to QoL	0.40	0.001	0.40	0.001
Lifestyle to QoL	0.31	0.001	0.31	0.001
QoL to depression	-0.35	0.001	-0.37	0.001
Attachment to God to depression mediated by QoL	-0.079	0.001	-0.083	0.001
Lifestyle to depression mediated by QoL	-0.079	0.001	-0.083	0.001

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family and prevents mental disorders and depression, so that even the presence of a disabled child cannot negatively impact this vitality. Lifestyle affects interpersonal relationships during crises. It is a framework for the identification and organization of skills, competencies, beliefs, and values. Having a transcendental awareness, creating a personal meaning, critical thinking, and expanding the state of consciousness can promote mental well-being, thereby alleviating depression [17].

A direct relationship was also observed between QoL and depression, suggesting that an increase in mothers' QoL is expected to decrease their depression. This finding is consistent with the results of previous research [22, 23]. The QoL theory assumes the existence of facilitators and inhibitory factors that increase or decrease the risk of sadness, dissatisfaction with life, depression, and anxiety. QoL is a valuable indicator for measuring health status in psychology and psychiatry. Depression is a highly prevalent and debilitating mental disorder, especially among adults, which can severely impact the QoL [23]. QoL deals with mental well-being, perceived social relationships, life satisfaction, physical health, economic status, daily functioning, and occupation, which is shaped by subjective views of the living conditions, perceived mental and physical health, social and family relationships, and functioning at home [24].

There was also an indirect relationship between attachment to God and depression, mediated by QoL; meanwhile, lifestyle was related to depression, mediated by QoL. The researchers found no similar study to compare the results. Both direct paths confirmed the mediating role of QoL in the relationship of attachment to God and lifestyle with depression. Families who have children with IDs are naturally affected by their children's disorder. This exacerbates parents', especially mothers' problems. Attachment to God and lifestyle determine mothers' relationship with the present and future states, their spouse, and their disabled children. Attachment to God helps alleviate mental disorders. Interpersonally, religious beliefs and practices help individuals gain cognitive, emotional, and physiological mastery over stress, and assume responsibility for and modify their thoughts and behaviors in conflicts. Interpersonally, attachment to God helps individuals consider the presence of God in conflicts and crises; turn to Him, and deal with problems peacefully. Attachment to God promotes communication with Him and gives mothers control over the environment and their communications. Meanwhile, a healthy lifestyle and adequate sleep help alleviate these mothers' depression and isolation.

This study was limited by its cross-sectional design which prevented inferences about causal relationships. Moreover, the sample comprised mothers of children with IDs in Tehran, which makes it difficult to generalize the findings to other groups and populations. Therefore, it is suggested that future studies recruit samples from other populations. Longitudinal and mixed-methods (qualitative and quantitative) studies can also be beneficial.

5. Conclusion

Overall, the findings revealed the proposed model's goodness of fit. This model promotes an understanding of the factors that affect depression in mothers of children with IDs; therefore, it can assist in the design of preventive programs for their stress and depression.

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Concerning the role of lifestyle and QoL in depression, it is recommended that relevant training courses and workshops be offered to mothers of children with IDs to promote their marital happiness and hopefulness.

Ethical Considerations

Compliance with ethical guidelines

The study was approved by the Ethics Committee of Islamic Azad University-Ahvaz Branch (Code: IR.IAU.AHVAZ.REC.1400.046).

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Authors' contributions

Study concept and design, data acquisition, analysis, and interpretation, and statistical analysis: Mahasti Samadpour Javaheri; Administrative, technical, and material support and study supervision: Sasan Bavi; Critical revision of the manuscript for important intellectual content: Sasan Bavi, Farzaneh Hooman; Approval of the final version: All authors

Conflict of interest

The authors declared no conflict of interest.

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