



Anxiety and Coping Strategies During the COVID-19 Pandemic in Mothers of Children with Thalassemia

Majedeh Nabavian ^{1,*}, Narges Rahmani ¹, Ali Afshari ², Azadeh Kiapour ³, Mojgan Firouzbakht ¹

¹ Department of Nursing and Midwifery, Comprehensive Health Research Center, Babol Branch, Islamic Azad University, Babol, Iran

² Nursing Department, School of Nursing and Midwifery, Chronic Diseases (Home Care) Research Center, Hamadan University of Medical Sciences, Hamadan, Iran

³ Department of Statistics, Babol Branch, Islamic Azad University, Babol, Iran

* Corresponding author: Department of Nursing and Midwifery, Comprehensive Health Research Center, Babol Branch, Islamic Azad University, Babol, Iran. Email: majedeh.nabavian@yahoo.com

Received 2023 January 19; Revised 2024 April 6; Accepted 2024 April 7.

Abstract

Background: Caring for children with thalassemia under stressful conditions adversely affects the health of mothers.

Objectives: This study aims to explore factors causing anxiety and coping strategies among these mothers during the COVID-19 pandemic.

Methods: This cross-sectional study utilized convenience sampling and included three questionnaires: The Coronavirus Disease Anxiety Scale (CDAS), the Carver Coping Strategies Questionnaire, and a Demographic Information Questionnaire. The questionnaires were filled out in person. Considering the study variables and allocating 15 samples per variable, the sample size was determined to be 200 participants.

Results: The results indicated no significant difference in average anxiety levels between mothers with underlying diseases and those without. The multiple regression analysis ($F = 13.950$, $AR2 = 0.163$, $P < 0.01$) confirmed the model's significance. Problem-oriented, emotion-oriented, and avoidance-oriented coping styles significantly impacted anxiety ($P < 0.01$).

Conclusions: It is recommended to promote problem-oriented coping strategies during the COVID-19 pandemic to reduce anxiety among these mothers.

Keywords: Anxiety, Coping Strategies, COVID 19 Pandemic, Thalassemia

1. Background

The lack of effective treatment for COVID-19 has rendered the disease a significant stressor, particularly for mothers of children with thalassemia who are at the forefront of caregiving. High anxiety about caring for a child with thalassemia and the lifestyle changes necessitated by the outbreak are common problems reported by these mothers during infectious disease outbreaks (1, 2). People employ various coping strategies under stress. The type and level of anxiety, as well as the coping strategies used during the COVID-19 pandemic, may vary across different societies. Epidemiological data in this area can be instrumental in planning interventions to mitigate the negative impacts of the disease on these mothers. However, research at both

global and national levels remains scarce in this area (3, 4).

2. Objectives

This study was conducted to improve the health of these mothers.

3. Methods

This cross-sectional study was conducted in May 2022 at the Children's Hospital in northern Iran. The research population included all mothers of children suffering from thalassemia who were treated at this hospital. Based on the study variables and an allocation of 15 samples per variable, the sample size was determined to be 200 individuals. Sampling was performed using the

availability sampling method. The inclusion criteria for the study were mothers of children with thalassemia diagnosed for at least one year. On the other hand, exclusion criteria included the occurrence of a stressful event in the last six months (e.g., divorce, death of a close relative, a diagnosed mental disorder, a history of physical illness, use of drugs related to mental health disorders, and COVID-19 infection).

Data were analyzed using descriptive and inferential statistics, performed with SPSS software version 26. Data collection was facilitated through a questionnaire completed in person, comprising three sections. The first section gathered individual characteristics, such as age, education level (below high school diploma, high school diploma, and academic), occupation (employee, self-employed, homemaker), history of underlying diseases, and smoking status. The second section was the Corona Disease Anxiety Scale, developed and validated by Alipour et al. to measure anxiety related to the spread of coronavirus in Iran (5). This tool includes 18 items divided into two components: Items 1 to 9 assess psychological symptoms and 10 to 18 assess physical symptoms. The content validity of this tool was verified by presenting the questionnaire to 10 experienced psychologists, who confirmed its validity. The tool's reliability was calculated using the Cronbach's alpha method ($\alpha = 0.89$). The third part assessed coping strategies using the Carver Coping Strategies Questionnaire, a self-report questionnaire containing 28 items that measure effective and ineffective methods for dealing with anxiety-inducing events (3). In this study, the tool's validity was confirmed by experts, and its reliability was verified using Cronbach's alpha ($\alpha = 0.87$).

4. Results

Statistical tests at the error level of 0.01 revealed no significant correlation between anxiety, coping styles, and demographic factors ($P > 0.01$). The results of the *t*-test for two independent samples (Table 1) indicate that there is no significant difference in average anxiety between mothers with underlying diseases and healthy mothers at the error level of 0.01 ($P > 0.01$).

Multiple regression was performed to analyze the contribution of coping strategies to predicting anxiety caused by the coronavirus in mothers (Table 2). Prior to running the regression, default assumptions were verified. The assumption of the normal distribution of residuals was established using a normal probability plot, which displays the residuals against the values predicted by the model. This confirms the assumption of covariance of residuals. The presence of

multicollinearity was investigated using the Variance Inflation Index (VIF) for each independent variable: Problem-oriented, emotion-oriented, and avoidance-oriented. With VIF values less than 5, the results indicate an absence of collinearity. The Durbin-Watson test results, ranging from 1.5 to 2.5, suggest the independence of errors, thus meeting the requirements for this analysis method. The results of the multiple regression analysis ($F = 13.950$, $AR^2 = 0.163$, $P < 0.01$) affirm the model's statistical significance. According to Table 2, problem-oriented, emotion-oriented, and avoidance-oriented styles significantly impact anxiety ($P < 0.01$). The avoidance style has a greater effect on mothers' anxiety, as indicated by the largest absolute standardized coefficient of determination among the coping styles. Problem-oriented and emotion-oriented styles are ranked next in terms of their impact.

5. Discussion

Apart from its relatively high mortality and contagion rates, the coronavirus epidemic has caused serious mental health issues worldwide (1). This study aimed to investigate anxiety-causing factors and coping strategies during the COVID-19 pandemic in mothers with children suffering from Thalassemia. Our findings indicate that most participants experienced severe anxiety due to COVID-19. Additionally, the results support the findings of Martinsone and Tzivian, which suggest that parents of children with chronic diseases experienced more anxiety than mothers of healthy children during the COVID-19 pandemic (6, 7). While the pandemic adds an additional layer of stress for parents, positive parenting experiences were significantly associated with lower parental anxiety (8).

Another objective of the study was to determine the types of coping strategies related to the COVID-19 virus employed by mothers with children suffering from Thalassemia. Our findings revealed that most participants used avoidance-oriented strategies to manage their anxiety. These findings align with those of Martinsone and Tzivian, who found that parents of children with chronic diseases employed various coping strategies, such as spending time with family, to reduce the anxiety caused by the epidemic (6, 7).

People employ different methods to cope with anxiety-inducing conditions and situations. Problem-oriented coping is an effective style that helps individuals take value-based actions under conditions brought on by the coronavirus (3). This study showed that the problem-oriented style was a negative and significant predictor, while the emotion-oriented and avoidance-oriented styles were positive and significant

Table 1. The Results of Independent Two-Sample *t*-Test Related to the Comparison of the Level of Anxiety of Mothers with Underlying Disease and Healthy Mothers

Variable	Underlying Disease	Number	Mean	<i>t</i>	df	P-Value
Anxiety	Healthy	103	1.8393	-1.671	198	0.096

Table 2. Multiple Regression Results to Predict Coronavirus-Induced Anxiety Based on Coping Strategies

Coping Strategies	Beta	<i>t</i>	P-Value
Constant	-	4.351	< 0.001
Problem-oriented style	-0.248	-3.608	< 0.001
Emotion-oriented style	0.177	2.631	0.009
Avoidance-oriented style	0.364	5.167	< 0.001

predictors in explaining the anxiety of COVID-19 in mothers, with the contribution of avoidance being more significant than the other two variables (9). Lazarus's research indicated that individuals who use problem-oriented methods adapt better to stressful situations, whereas those with poor mental health tend to use inefficient methods (10).

5.1. Conclusions

This study found that the average anxiety levels of mothers with underlying diseases and healthy mothers were the same, and they primarily used avoidance-oriented coping strategies to manage anxiety. Although this coping style may temporarily reduce anxiety, further studies on the long-term effects of coping strategies in these mothers are necessary.

Acknowledgements

The researchers would like to thank the mothers and all the officials at Shafizadeh Amirkola Children's Hospital for their cooperation in conducting this study.

Footnotes

Authors' Contribution: M.N was involved in the study conception and design, and interpretation of the results. N.R participated to the study design, analysis and results interpretation and writing-up of the manuscript. M.F contributed to analyze and interpret the data. All authors reviewed and edited the manuscript and approved the final version of the manuscript.

Conflict of Interests Statement: The authors declare no conflict of interest.

Data Availability: The dataset presented in the study is available on request from the corresponding author during submission or after publication. The data are not publicly available due to privacy or ethical restrictions.

Ethical Approval: This study is approved under the ethical approval code of Islamic Azad University of Medical Sciences, Babol, Iran, approved this study (code: [IR.IAU.BABOL.REC.1401.002](https://ris.iau.ir/)).

Funding/Support: Grant number is 1560102310001 (Webpage of the grant number: <https://ris.iau.ir/>).

References

- Nabavian M, Rahmani N, Alipour H. Experiences of Nursing Students in the Care for Patients Diagnosed With COVID-19: A Qualitative Study. *J Patient Exp.* 2021;8:23743735211039900. [PubMed ID: 34553042]. [PubMed Central ID: PMC8450550]. <https://doi.org/10.1177/23743735211039925>.
- Nabavian M, Cheraghi F, Shamsaei F, Tapak L, Tamadoni A. A Qualitative Study Exploring the Experiences of Mothers Caring for Their Children with Thalassemia in Iran. *Ethiop J Health Sci.* 2021;31(6):1287-94. [PubMed ID: 35392350]. [PubMed Central ID: PMC8968379]. <https://doi.org/10.4314/ejhs.v31i6.25>.
- Jernigan DB; Cdc Covid- Response Team. Update: Public Health Response to the Coronavirus Disease 2019 Outbreak - United States, February 24, 2020. *MMWR Morb Mortal Wkly Rep.* 2020;69(8):216-9. [PubMed ID: 32106216]. [PubMed Central ID: PMC7367075]. <https://doi.org/10.15585/mmwr.mm6908e1>.
- Randolph AG, Vaughn F, Sullivan R, Rubinson L, Thompson BT, Yoon G, et al. Critically ill children during the 2009-2010 influenza pandemic in the United States. *Pediatrics.* 2011;128(6):e1450-8. [PubMed ID: 22065262]. [PubMed Central ID: PMC3387899]. <https://doi.org/10.1542/peds.2011-0774>.
- Alipour A, Ghadami A, Alipour Z, Abdollahzadeh H. [Preliminary validation of the Corona Disease Anxiety Scale (CDAS) in the Iranian sample]. *Health Psychol.* 2020;8(32):163-75. Persian. <https://doi.org/10.30473/hpj.2020.52023.4756>.
- Martinsons B, Tzivian L. Differences in Stress and Coping During the COVID-19 Pandemic in Families With and Without Children With Developmental Disorders or Chronic Conditions. *Front Public*

- Health*. 2021;**9**:704577. [PubMed ID: 34490186]. [PubMed Central ID: PMC8417897]. <https://doi.org/10.3389/fpubh.2021.704577>.
7. Neece C, McIntyre LL, Fenning R. Examining the impact of COVID-19 in ethnically diverse families with young children with intellectual and developmental disabilities. *J Intellect Disabil Res*. 2020;**64**(10):739-49. [PubMed ID: 32808424]. [PubMed Central ID: PMC7461180]. <https://doi.org/10.1111/jir.12769>.
 8. Neubauer AB, Schmidt A, Kramer AC, Schmiedek F. A Little Autonomy Support Goes a Long Way: Daily Autonomy-Supportive Parenting, Child Well-Being, Parental Need Fulfillment, and Change in Child, Family, and Parent Adjustment Across the Adaptation to the COVID-19 Pandemic. *Child Dev*. 2021;**92**(5):1679-97. [PubMed ID: 33462836]. [PubMed Central ID: PMC8013550]. <https://doi.org/10.1111/cdev.13515>.
 9. Borzou SR, Shadi D, Kalvandi N, Afshari A, Tapak L. [The effect of spiritual care education on hope in the elderly residents of nursing homes in Hamadan province in 2018]. *J Hayat*. 2020;**26**(2):192-204. Persian.
 10. Lazarus RS. Toward better research on stress and coping. *Am Psychol*. 2000;**55**(6):665-73. [PubMed ID: 10892209]. <https://doi.org/10.1037//0003-066x.55.6.665>.