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Shiraz University of Medical Sciences,
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The Official Quarterly Publication of Shiraz University of Medical Sciences

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Journal Article:

- Gaydess A, Duysen E, Li Y, Gilman V, et al. Visualization of exogenous delivery of nanoformulated butyrylcholinesterase to the central nervous system. Chem Biol Interact. 2010;187:295-8.
- Javan S, Tabesh M. Action of carbon dioxide on pulmonary vasoconstriction. J Appl Physiol. In press 2005

Complete Book:

- Guyton AC: Textbook of Medical Physiology. 8th ed. Philadelphia, PA,

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## Original Articles



## Letters to Editor

# Original Article

# Booklet and Motivational Interviewing to Promote Self-efficacy in Parents/Caregivers of Children with Asthma: A Clinical Trial

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## Abstract

**Background:** Asthma is the most common chronic disease in childhood which accounts for numerous annual hospitalizations due to a lack of management and proper management of the disease. Thus, this study aimed to evaluate the effect of using an educational booklet with or without combination with motivational interviewing (MI) on the self-efficacy of parents/caregivers in the control and management of childhood asthma.

**Methods:** A clinical trial was carried out with 86 parents/caregivers of children with asthma aged between 2 and 12 years who were followed up in primary health care units from March 2019 to December 2020. Participants were randomly assigned to two groups: one of the groups read the booklet and the other read the booklet combined with the MI. The Brazilian version of the Self-Efficacy and Their Child's Level of Asthma Control scale was applied before and 30 days after the intervention for assessment of self-efficacy. Data were analyzed using SPSS version 20.0 and R 3.6.3 software. P values<0.05 were considered significant.

**Results:** There were 46 participants in the booklet group and 40 in the booklet and MI group. Both groups were effective in increasing total self-efficacy scores after the intervention (P<0.001). No statistically significant difference was found between the scores of the two groups (P=0.257).

**Conclusion:** The educational booklet with or without combination with MI can increase the self-efficacy of parents/caregivers of children with asthma. The findings could be considered by healthcare providers for the empowerment of caregivers of children with asthma in the control and management of their children's asthma.

**Trial Registration Number:** U1111-1254-7256.

**Keywords:** Asthma, Children, Self efficacy, Health education, Nursing

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## Introduction

Asthma is considered the most common chronic disease among children.[1] It affects between 1% and 18% of the world population.[2] In 2019, there were 262 million people with asthma and 455,000 deaths were caused by the disease.[3] Asthma is an underdiagnosed and undertreated disease, especially in low- and middle-income countries.[1]

According to the records of the Department of Informatics of the Brazilian Unified Health System from January 2021 to June 2022, there were about 56,809 hospitalizations in the age group of 1 to 9 years, due to asthma. The southeast and northeast regions of Brazil had the highest rates of hospitalizations and deaths, respectively, contributing to about US$ 34 million of the hospitalization costs for the Unified Health System.[4]

The occurrence of symptoms such as wheezing, shortness of breath, chest tightness, and cough together with variable limitation of expiratory airflow can cause exacerbation of symptoms and/or acute asthma attacks, which may result in hospitalizations and, rarely, in deaths.[2, 5] However, with proper asthma management, it is possible to achieve and maintain clinical control, improving the quality of life of individuals with asthma.[2]

Previous studies have described self-efficacy as one of the modifiable factors that can improve management related to childhood asthma, clinical outcomes, and quality of life for children and families.[6, 7] Self-efficacy is the personal belief that behavior can produce the desired result and can be decisive in the health behavior that should be adopted, how much effort will be invested, and how long it will be maintained in the face of difficulties and unforeseen circumstances.[8] Thus, educational technologies based on the self-efficacy of parents/caregivers in asthma management have been widely used to promote healthy behaviors.[9, 10]

Previous experiences showed that educational intervention for parents/caregivers of children with asthma can influence self-efficacy beliefs directly related to the subject's motivation and resilience to perform a given task.[11, 12] Motivation is a key component of the behavior change process as it guides and maintains goal-related behaviors.[13] Given this, printed educational technologies combined with motivational interviewing (MI) have been highlighted as the strategies that can increase self-efficacy to promote healthy behaviors.[14, 15] MI is an individual counseling approach that can resolve the ambivalence that the individual may have health behaviors in favor of change.[16] It is a collaborative conversation style, which aims to strengthen the individual's motivation and commitment to behavioral change. In addition, MI favors a horizontal relationship between the professional and the patient as well as qualified and humanized care.[16]

Other studies have related MI and self-efficacy to the management and control of chronic diseases. A study carried out in Turkey in which an intervention was carried out using MI found a significant difference, indicating that the mean self-efficacy scores of patients with chronic obstructive pulmonary disease in the group that received the intervention were superior to those in the control group.[17]

Furthermore, a systematic review analyzed the effectiveness of technological interventions to improve health communication with children with chronic illnesses and included studies with printed, audiovisual, and other types of educational technologies. Most studies demonstrated positive results for self-management behaviors and symptoms, quality of life, and improvement of the individuals' knowledge regarding their health status.[8]

The absence of educational technologies associated with MI to promote parents/caregivers' self-efficacy in controlling childhood asthma indicates the need for more interventional studies and support strategies for parents/caregivers.[8] This population lacks support and guidance in the management of childhood asthma, and the care provided by it is fundamental to effectively improving health conditions and controlling asthma.[5]

Due to the positive effect of MI, we assessed the effect of the use of an educational booklet combined with MI on the self-efficacy of parents/caregivers in the control and management of childhood asthma.

## Materials and Methods

This is an uncontrolled clinical trial carried out from March 2019 to December 2020 with 86 parents/caregivers of children with asthma aged between 2-12 years receiving care in two primary healthcare units (PHCUs) in the municipality of Fortaleza, capital of the state of Ceará, which is in the Northeast region of Brazil.

In Brazil, healthcare is provided by the Brazilian Unified Health System (SUS, as per its Portuguese acronym). SUS is organized into health networks, with Primary Care being the first level of care, where the patients have their first contact with health services, through PHCUs that are linked to the territory and are the main gateway to health services. The municipality of Fortaleza has the Program for Comprehensive Care for Children and Adults with Asthma (PROAICA, as per its Portuguese acronym),[18] which is affiliated to SUS and aims to follow up people with asthma in the context of primary care, with children being the main target group. For these reasons, PHCUs were chosen as the setting for the study.

It should be noted that the municipality of Fortaleza is divided into six Regional Executive Secretariats (RES), which account for implementing municipal public policies, including the management of health units in the neighborhoods within their area of coverage. The RES and two PHCUs in the region were selected through a simple random draw using an opaque envelope. The two PHCUs belong to RES 5, where the study was carried out. Eligible participants were assigned randomly to each intervention group.[19, 20]

The clinical trial consisted of two experimental groups, which received the interventions.[19, 21] Thus, experimental group A received the printed educational booklet for reading as an intervention, while experimental group B received the booklet to read and then participated in the MI. Both groups took the educational booklet home after the intervention.

The main researcher was aware of the allocation of participants because she was responsible for the intervention, and the parents/caregivers were aware of the intervention they were going to receive. However, the team responsible for collecting data by telephone calls was unaware of the groups. At the beginning of the call, the participants were instructed not to mention the interventions held in the PHCUs. The statistical team was also unaware of the participants allocated to the analyzed groups.

The sample size was calculated at 42 patients in each group based on average self-efficacy scores calculated from a previous study,[20] error of 5% ($\alpha$=0.05), power of 80% ($\beta$=0.20), $\mu_1$=68.13, $\mu_2$=64.91, $\sigma_1$=5.23, $\sigma_2$=5.23, and use of the comparison formula between the two means. The sample was calculated using the R 3.6.3. software using the following formula:

$$n = \frac{\left(z_{1-\frac{\alpha}{2}} + z_{1-\beta}\right)^2 (S_1^2 + S_2^2)}{(\mu_1 - \mu_2)^2}$$

The inclusion criteria in the study were being parents/caregivers of at least one child between 2-12 years old, being diagnosed with asthma and under inhaler treatment as followed up in the PHCUs mentioned above, having a cell phone or landline, being literate parents/caregivers and not having visual and/or hearing impairments. In turn, the exclusion criteria were parents/caregivers who discontinued participating at some point in data collection.

Groups A and B started and remained with 46 and 40 participants, respectively, even after 30 days of follow-up (Figure 1). It should be noted that data collection took place during the social isolation due to the COVID-19 pandemic. In Ceará, during this period,

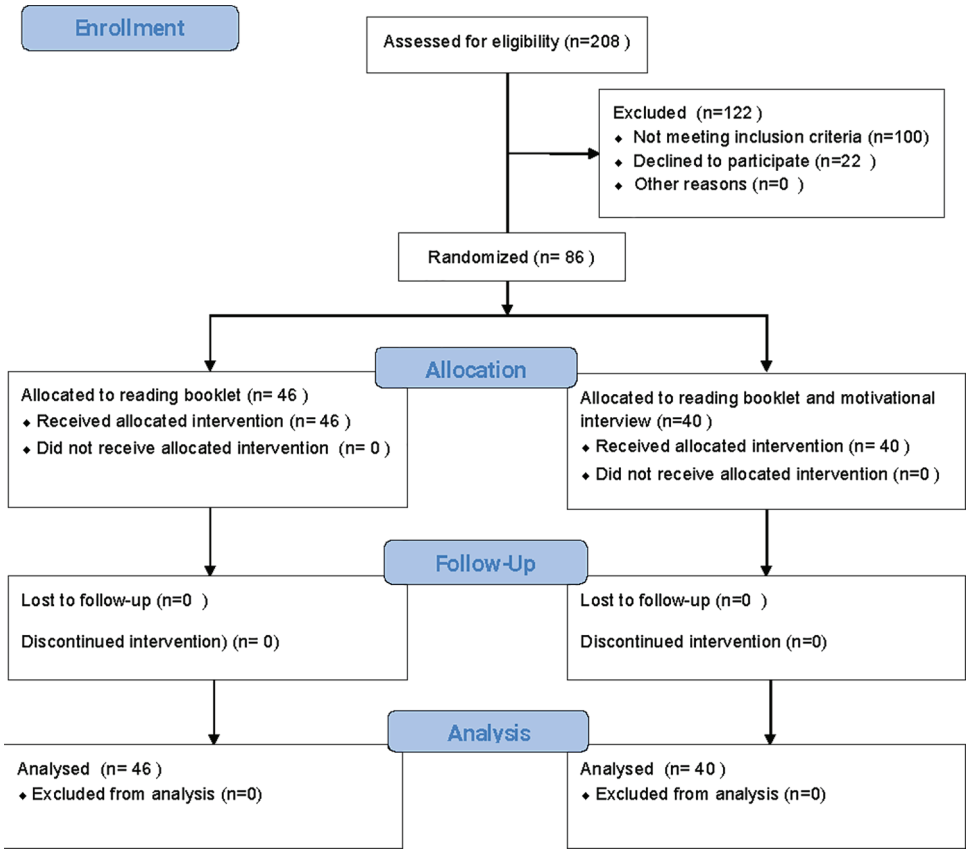


**Figure 1:** CONSORT flowchart of the study participants

follow-up through PROAICA was suspended due to the elective nature of the program. This made it difficult to complete the sample calculation in group B due to the end of the period determined for data collection.

Two instruments were used to collect the data, which were applied by a trained team. The first covered the sociodemographic and clinical data of the parents/caregivers of children with asthma. The second was the Brazilian version of the STCLA-VB, designed by Wood et al.,[21] which was subsequently translated, adapted, and validated to Brazilian Portuguese by Gomes et al.[22] The Content Validity Index of this scale is 0.8822, and Cronbach's alpha is 0.92.[23] The scale is divided into two domains: expectations of efficacy, with seven items, and expectations of outcome, with ten items. The responses are scored using a five-point Likert scale, in which 1 means "totally disagree" and 5 means "totally agree" with total scores varying from 17 to 85 points; the higher the score, the greater the confidence of parents/caregivers in terms of management of asthma.

Data were collected through the application of the form and the scale (1st assessment); then, groups A and B received the educational interventions, as detailed below; and finally, the scale was applied 30 days after the start of data collection (2nd assessment).

Both groups used the educational booklet entitled "Are you able to control your child's asthma: Let us learn together?" The booklet has 40 pages and was developed using Bandura's Self-Efficacy Theory[24] as a theoretical reference, which was validated for content (CVI: 0.93), technical aspects (CVI: 0.96), clear language (CVI: 0.91), practical relevance (CVI: 0.93), theoretical relevance, and validated by the parents/caregivers of children with asthma aged between 2- 12 years old (CVI: 0.99).[10] The booklet content is divided into nine topics: 1. What is asthma?; 2. Let's learn what can cause asthma symptoms; 3. Let's learn how to reduce asthma triggers; 4. Let's learn about the importance of the health service; 5. Let's learn when the child

needs to take medication; 6. Let's learn when an asthma attack needs to be treated in the emergency room; 7. Let's learn how to use the asthma pump; 8. Let's learn how to keep the child's mouth healthy; and 9. Controlled asthma improves health and well-being.[12] It should be noted that topics 1 to 8 are part of the domain expectations of efficacy and topic 9 is part of the domain expectations of the outcome. In addition, the booklet was based on the four sources of self-efficacy, as shown in Figure 2.

The participants in the groups read the entire booklet in the presence of the researcher, in a room at the PHCU, for approximately 15 minutes, and took it with them after the intervention. The booklet was prepared with simple, clear, and direct language, optimizing the reading process.

After the participants in group B finished reading the booklet, they also received an MI in the same room at the PHCU, lasting for 25-30 minutes, allowing parents/caregivers to express their opinions about the booklet and the covered topics. MI consists of an intervention that can be carried out briefly and in a single session.[25] To ensure the quality of the interview, a script was used that guided the main researcher during the interview, based on a communication style centered on the individual to increase personal motivation and commitment to behavioral change by evoking and intensifying the individual's reasons for change. Furthermore, the script also sought to consider Bandura's theory of self-efficacy to improve expectations of effectiveness and outcome.[11]

MI was conducted by a single and previously trained researcher according to a standard procedure. The interviewing process followed three basic communicative skills: asking, informing, and listening.[15] The communicative skills of listening, asking, and informing were permeated by listening to the participants' conversations and their personal and vicarious experiences, seeking to evoke the motivations of the parents/caregivers based on the illustrations in the booklet that deals with the care of children in the management and control of childhood asthma.

Telephone calls to follow up the self-efficacy levels of parents/caregivers using the STCLA-VB scale to control childhood asthma took place 30 days after the first assessment with the scale. The same sentence order and voice intonation were followed in all the calls. It should be noted that the telephone follow-up team was unaware of the allocation of the study participants. For participants who did not respond to the first contact, new calls were made on the following days, at the same time as chosen. At least three attempts were made over three consecutive days. After that, a new attempt was made after five more days in the case of participants who did not answer the calls. Thus, there was no loss of segment in this study.

Data were tabulated and analyzed using

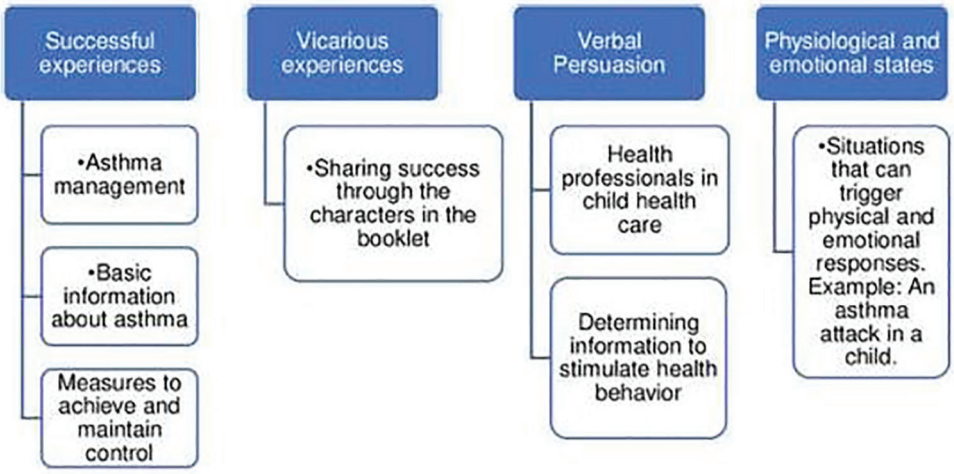


**Figure 2:** Structure of the content of the booklet according to the sources of self-efficacy

SPSS version 20.0 and R 3.6.3 software. The Shapiro-Wilk test was performed to check the normality of the data. The Bartlett's test was used to check the homogeneity of variances. Mean self-efficacy scores calculated between sociodemographic categories were associated using Pearson's chi-square test. Within-group comparisons of mean self-efficacy scores before and after the intervention were performed using the paired t-test. Between-group comparisons were made using the independent t-test. A significance level of 95% was considered for all tests. P values <0.05 were considered significant.

The present study was approved by the Research Ethics Committee of the Federal University of Ceará (number: U1111-1254-7256). All participants signed a written consent at the beginning of the study and data confidentiality, voluntary participation, and the right to withdraw from the study were guaranteed.

## Results

Eighty-six parents/caregivers met the inclusion criteria. The mean age was 36±9 years. In both groups, most participants were 31 years old or older, worked outside the home, and had a family income of up to R$ 1.497,00. The chi-square test showed no significant difference between the groups regarding age, education, occupation, and family income (P>0.05) (Table 1). Therefore, the groups were considered homogeneous in terms of baseline characteristics.

The paired t-test showed that both groups revealed a statistically significant increase in the means of the two domains (expectations of effectiveness and expectations of outcomes) and in the mean of the total STCLA-VB scores (P<0.001) after the intervention (Table 2).

The independent t-test showed that before the intervention, the participants in the booklet and MI group had higher scores than those in the booklet group on the total scale (P=0.033) and in the expectations of outcome domain (P=0.032). However, one month after the intervention, the total scores (P=0.257), expectations of efficacy domain (P=0.105), and expectations of outcome domain (P=0.996) had no statistical difference between the two groups. After and before differences of total and domain scores of self-efficacy in each group were compared together and showed no statistically significant difference (P>0.05).

## Discussion

The findings of this study showed that the interventions of application of the booklet and application of the booklet plus MI effectively increased the self-efficacy of the parents/

**Table 1:** Sociodemographic characteristics of parents/caregivers according to the educational booklet and motivational interviewing groups

| | Booklet group (N=46) | Booklet and motivational interviewing group (N=40) | P value* |
|---|---|---|---|
| | N (%) | N (%) | |
| **Parent/caregiver's age group** | | | |
| 18-30 | 15 (32.6) | 8 (20) | 0.283 |
| >31 | 31 (67.4) | 32 (80) | |
| **Education** | | | |
| Less than 9 years of study | 26 (56.5) | 19 (47.5) | 0.535 |
| More than 9 years of study | 20 (43.5) | 21 (52.5) | |
| **Parent/caregiver's occupation** | | | |
| Work outside the home | 23 (50) | 21 (52.5) | 0.988 |
| Perform household activities | 23 (50) | 19 (47.5 | |
| **Family income (minimum wage)[a]** | | | |
| Up to one and a half minimum wage | 35 (76.1) | 25 (62.5) | 0.257 |
| More than one and a half minimum wage | 11 (23.9) | 15 (37.5) | |

*Chi-square test; [a]Minimum wage 998,00 BRL

**Table 2:** Comparison of the total and domain scores of the self-efficacy of parents of children with asthma before and after the intervention within and between two groups

| Variable | Booklet group | | Within booklet group P value* | Booklet and motivational interviewing group | | Within booklet and motivational interviewing group P value* | Between two groups P value** | |
|---|---|---|---|---|---|---|---|---|
| | Before the intervention (Mean± SD) | After the intervention (Mean± SD) | | Before the intervention (Mean± SD) | After the intervention (Mean± SD) | | Before the intervention | After the intervention |
| Expectations of efficacy domain score | 24±5 | 28±1.9 | <0.001 | 25±4.2 | 29±1.4 | <0.001 | 0.279 | 0.105 |
| Expectations of outcome domain score | 44±8 | 49±1.1 | <0.001 | 47±3.8 | 49±1.3 | <0.001 | 0.032 | 0.996 |
| Total scale score | 68±13 | 78±2.4 | <0.001 | 73±7.2 | 78±2.6 | <0.001 | 0.033 | 0.257 |

*Paired t-test; **Independent t-test

caregivers of children with asthma. This effect was not statistically different between the two groups. In general, the results showed that the intervention with the educational booklet was effective in increasing the self-efficacy scores of the parents/caregivers of children with asthma, regardless of the application of MI. The MI technique, despite being very effective in other contexts,[13, 16] in this study did not generate significant differences about the application of it in comparison with the booklet alone.

A study that applied printed educational content and educational videos to patients with asthma found that concerning information about symptoms, the recall performance did not differ significantly between the participants in the printed content and video groups. This is in line with the findings of the present study in which the educational booklet was effective in passing on knowledge to parents/caregivers and increasing self-efficacy.[26]

The booklet has a theoretical basis that aims to raise not only the expectations of outcomes but also the expectations of the effectiveness of parents/caregivers, even in the face of the challenges of asthma management to achieve and maintain the control of the disease.[10] Believing that its action will achieve a satisfactory outcome and feeling able to perform a certain behavior, despite obstacles, means that both expectations of outcome and effectiveness were achieved, which was demonstrated in this study by the increased scores in the two domains of the scale.[16]

Evidence from previous studies supports self-efficacy as the strongest predictor of health-promoting behaviors, emphasizing the importance of using this theoretical construct in planning and implementing any health intervention for patients with chronic illnesses.[6, 13, 14, 16, 27]

The combination of educational technologies and assessments at different time intervals can support the practice of professionals in the health education process.[14] The technique of MI combined with reading a printed educational booklet, both based on the theory of self-efficacy, can improve self-efficacy and help individuals make behavioral changes to achieve a personal goal.[16] It is known that MI is a technique that has also been implemented by some researchers to change behavior with satisfactory results in health promotion.[28]

The effectiveness of an asthma self-management program based on Bandura's theory of self-efficacy was assessed in a randomized clinical trial with a sample of 83 adolescents.[29] The program offered several strategies based on Bandura's four sources of self-efficacy.[7] In the direct or personal experience, a discussion was promoted

about the desires and objectives that could be achieved in the program. In the vicarious experience, the study sought to achieve the domains of asthma self-management skills according to the models that were presented in the booklet. For verbal persuasion, phone calls and text messages were used; also, in the physiological and emotional states, the study tried to work on the feelings that could be experienced during an asthma attack. The results demonstrated the positive effects of an asthma self-management program with improvements in self-efficacy, outcome expectations, prevention, and asthma management behaviors.

In the present investigation, the content of the booklet used in the intervention was also prepared with the aim of covering the four sources of self-efficacy. Given that parents/caregivers received the booklet, this allows us to infer that easy access made them take ownership of the information, in the long term, through reading without the help of a professional.

The results are consistent with those of an experimental study that analyzed three interventions: booklet, video, and booklet and video combined to promote maternal self-efficacy in preventing childhood diarrhea.[14] Two months after the intervention, the booklet group was the one with the highest average self-efficacy, demonstrating that the printed educational material constructed based on the four sources of self-efficacy is effective in increasing self-efficacy scores. Furthermore, a systematic review recommends the use of strategies to promote self-efficacy to optimize effectiveness in the management of chronic diseases such as asthma.[30]

The results of this study are important, since childhood asthma is responsible for high annual healthcare costs and is one of the main reasons for emergency care, hospitalizations, school absenteeism, and parents' lost workdays.[31] This study was an attempt to make technologies available elaborated based on the Self-Efficacy Theory to promote self-efficacy and improve the control and management of childhood asthma. Although the difference between the interventions did not present statistical significance, in both groups the educational booklet was able to promote the self-efficacy of parents/caregivers of children with asthma. Therefore, the results of this study allow us to infer that the use of MI becomes optional to increase the effectiveness of parents/caregivers of children with asthma. However, more research is needed to evaluate the effect of MI in promoting self-efficacy and achieving asthma control and management. A randomized clinical trial, carried out in Iran, found that MI was effective in improving self-efficacy, beliefs about medications, and medication adherence among 52 adolescents after three sessions, held individually, one hour per week.[13]

This study is the first to evaluate the use of an educational booklet with or without MI on the self-efficacy of parents/caregivers in the control and management of asthma. The study had limitations related to the difficulty in establishing contact by telephone, carrying out the intervention in a single moment, and sample supervision for only 30 days.

## Conclusion

The use of an educational booklet with or without MI increased the self-efficacy of parents/caregivers of children with asthma. The findings can be useful for healthcare providers to promote the empowerment of caregivers of children with asthma in the control and management of their children's asthma.

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## References


1 World Health Organization. Asthma: key facts. Geneva: World Health Organization; 2023.

2 Global Initiative for Asthma. 2022 GINA Report, Global Strategy for Asthma Management and Prevention. US: Global Initiative for Asthma; 2022.

3 GBD 2019 Diseases and Injuries Collaborators. Global burden of 369 diseases and injuries in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet. 2020;396:1204-22.

4 Ministry of Health of Brazil. Brasília: DATASUS 2022. Brazil: Ministry of Health of Brazil; 2022. [Cited 7 Oct 2023]. Available from: http://datasus.saude.gov.br/informacoes-de-saude-tabnet/ [In Portuguese]

5 Roncada C, Medeiros TM, Strassburger MJ, et al. Comparison between the health-related quality of life of children/adolescents with asthma and that of their caregivers: a systematic review and meta-analysis. Journal Brasileiro de Pneumologia. 2020;46:e20190095.

6 González-Conde VM, Pérez-Fernández V, Ruiz-Esteban C, Valverde-Molina J. Impact of self-efficacy on the quality of life of children with asthma and their caregivers. Archivos de Bronconeumología. 2019;55:189-94.

7 Bandura A. On the functional properties of perceived self-efficacy revisited. Journal of Management. 2012;38:9-44.

8 Dorgeat E, Adeleye A, Lifford KJ, Edwards A. Effectiveness of technological interventions to improve healthcare communication with children with long-term conditions: A systematic review and meta-analysis of randomised controlled trials. Patient Education and Counseling. 2022;105:1411-26.

9 Frey SM, Contento NC, Halterman JS. Nurse-delivered outpatient asthma education for children and caregivers: a pilot study to promote shared asthma management. Journal of Asthma. 2021;58:413-21.

10 Lima KF, Gomes ALA, Melo ESJ, et al. Content validation of an educational booklet for asthma control and management in children. Revista Brasileira de Enfermagem. 2021;74:e20200353.

11 Bandura A. Self-efficacy: the exercise of control. 1st ed. New York: Freeman and Company; 1997.

12 Heckhausen J, Hechhausen H. Motivation and action. 2nd ed. UK: Cambridge University Press; 2008.

13 Barikani A, Negarandeh R, Moin M, Fazlollahi MR. The impact of motivational interview on self-efficacy, beliefs about medicines and medication adherence among adolescents with asthma: a randomized controlled trial. Journal of Pediatric Nursing. 2021;60:116-22.

14 Penha JC, Nascimento LA, Sabino LMM, et al. Effects of educational interventions on maternal self-efficacy and childhood diarrhea: a randomized clinical trial. Maternal and Child Health Journal. 2022;26:1507-15.

15 Miller WR, Rollnick S. Motivational interviewing: helping people change. 3rd ed. New York: The Guilford Press; 2012.

16 Sabino LMM, Ferreira ÁMV, Mendes ERR, et al. Educational interventions using a primer and motivational interviewing: randomized clinical trial. European Journal of Public Health. 2021;31:985-90.

17 Karaçar Y, Demirkıran, F. Effect of motivational interview-based self management programme on self-efficacy in individual with chronic obstructive pulmonary disease: a randomized controlled trial. Current Psychology. 2023. [Online]

18 Amaral LMD, Palma PV, Leite Gonçalves IC. Evolution of public policies and programs for asthma control in Brazil from the perspective of consensus guidelines. Jornal Brasileiro de Pneumologia. 2012;38:518-25.
19 Zakipour M, Hajalizadeh K, Sirfi M, et al. Effect of an Educational Intervention Based on the Protection Motivation Theory on the Self-Care of Patients With Myocardial Ischemia. Journal of Preventive Medicine. 2022;9:144-55. [In Persian]
20 Gomes ALA, Lima KF, Mendes ERDR, et al. Association of self-efficacy of parents/caregivers with childhood asthma control parameters. Revista da Escola de Enfermagem da USP. 2017;51:e03282.
21 Wood MR, Price JH, Dake JA, et al. African American parents'/guardians' health literacy and self-efficacy and their child's level of asthma control. Journal of Pediatric Nursing. 2010;25:418-27.
22 Gomes ALA, Joventino ES, Lima KF, et al. Validation and reliability of the scale Self-efficacy and their child's level of asthma control. Revista Brasileira de Enfermagem. 2018;71:406-12.
23 Gomes ALA, Ximenes LB, Mendes ERR, et al. Translation and cultural adaptation of the self-efficacy and their child's level of asthma control scale: Brazilian version. Texto & Contexto Enfermagem. 2016;25:e2950015.
24 Bandura A. Regulation of cognitive processes through perceived self-efficacy. Developmental Psychology. 1989;25:729-35.
25 Rollnick S, Miller WR, Butler CC. Motivational interviewing in health care: helping patients change behavior. 1st ed. New York: The Guildford Press; 2008.
26 Wilson EA, Park DC, Curtis LM, et al. Media and memory: the efficacy of video and print materials for promoting patient education about asthma. Patient Education and Counseling. 2010;80:393-8.
27 Chang YL, Wu SC. Is a mathematics teacher's efficacy influential to their students' mathematics self-efficacy and mathematical achievement? Vancouver: PME 38 and PME-NA 36; 2014. [Cited 26 Jul 2022]. Available from: https://www.pmena.org/pmenaproceedings/PMENA%2036%20PME%2038%202014%20Proceedings%20Vol%201.pdf
28 Frost H, Campbell P, Maxwell M, et al. Effectiveness of Motivational Interviewing on adult behaviour change in health and social care settings: a systematic review of reviews. PLoS One. 2018;13:e0204890.
29 Tseng TJ, Wu CJ, Chang AM. Theoretical asthma self-management program for Taiwanese adolescents with self-efficacy, outcome-expectancy, health behaviour, and asthma symptoms: A randomized controlled trial. Contemporary Clinical Trials Communications. 2020;19:100624.
30 Lycett HJ, Raebel EM, Wildman EK, et al. Theory-Based Digital Interventions to Improve Asthma Self-Management Outcomes: Systematic Review. Journal of Medical Internet Research. 2018;20:e293.
31 Trivedi M, Denton E. Asthma in children and adults-what are the differences and what can they tell us about asthma? Frontiers in Pediatrics. 2019;7:256.

# Original Article

# Highly Educated Mother's Perception of Childhood Vaccination Hesitancy in Kazakhstan: A Thematic Analysis

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## Abstract

**Background:** Vaccine hesitancy among parents directly affects the child's vaccination status since they are the legal decision-makers regarding vaccinating their children. The study aimed to describe the perceptions of highly educated Kazakhstani mothers about childhood vaccination hesitancy.

**Methods:** The study utilized a thematic analysis to explore the mothers' perceptions. A sample of 95 participants comprehensively answered the free-text questions in an online questionnaire from January to February 2023. The analysis of the free-text responses followed a semantic thematic analysis approach. The data were coded manually.

**Results:** From the in-depth analysis of the data, 285 initial codes were extracted. The combination of similar meanings and concept codes led to 14 sub-themes and finally yielded four significant themes: misconceptions about childhood vaccination, fear of the effect of vaccine on children, distrust of the healthcare system, and social learning factors.

**Conclusion:** The perceptions of Kazakh mothers about childhood vaccination hesitancy may lead to behaviors of delaying and refusing some or all childhood vaccines. Therefore, motivational and educational strategies can be used by healthcare providers to instill trust in parents about childhood vaccines and their safety and effectiveness.

**Keywords:** Mothers, Qualitative research, Vaccination, Vaccine hesitancy, Vaccination refusal

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## Introduction

Poor vaccine adherence may lead to outbreaks of vaccine-preventable diseases. In 2022, the World Health Organization (WHO) reported a 400% increase in measles cases in Africa compared to the same period in 2021 due to a lack of access to vaccines and disruptions caused by the COVID-19 pandemic. Similarly, 145 measles cases were registered in Kazakhstan from the beginning of 2023, most of which were among unvaccinated children or children whose vaccination status was unknown.[1] There are various reasons for vaccine hesitancy. In a large study which identified the barriers to influenza vaccine uptake, more than 70 vaccine hesitancy determinants were recognized.[2] They were classified into contextual (access to vaccines, frequency of doctor's appointments), psychological (risk perception, attitude, knowledge, experience), sociodemographic (age, gender, social status), and physical (alcohol consumption, smoking, low physical activity) barriers.[2] In a different study, the factors influencing parental decision-making regarding childhood vaccination included trust in the healthcare workers and healthcare system, social norms (viewing vaccination as a "normal thing to do"), the influence of social networks and the Internet, knowledge about vaccines and primary sources of information, individual perception of risks of vaccines and contraction of vaccine-preventable diseases and beliefs regarding health in general.[3] A previous study highlighted three main determinants of vaccine hesitancy among parents: risk perception, trust in healthcare providers, and social norms.[4]

Perception of risk is one of the most reported determinants of vaccine hesitancy among parents. Risk perception can be explained in terms of parental concerns about developing adverse effects from receiving the vaccines versus the negative consequences of being infected with the vaccine-preventable disease and the likelihood of the child contracting it.[5] Vaccine hesitancy is associated with low-risk perception, indicating that parents delay or refuse vaccination due to beliefs of low susceptibility to the infection and concerns that the child will have a severe adverse reaction to the vaccine.[6, 7]

Sources of information shape an individual's perception of vaccines. Trusting the healthcare system and healthcare providers has a significant influence on an individual's vaccination behavior. Vaccine hesitancy is associated with distrust or low trust in the medical system and healthcare providers.[8, 9] Therefore, individuals and parents who treat governmental healthcare agencies and medical professionals as trustworthy sources of information are more likely to vaccinate themselves and their children. Moreover, parental trust in friends' and family's opinions regarding vaccination predicted vaccine hesitancy.[9] The mistrust in healthcare providers and systems can be explained by the person's belief that medical staff have negative motives and are not acting in the patient's best interest.[10] Additionally, an overwhelming amount of correct and incorrect information on childhood vaccination makes the decision-making process more difficult. Therefore, the accurate or inaccurate beliefs that an individual had before reading new information on vaccination or refutation of common misconceptions significantly influence whether this person will agree or disagree with the information.[11] These common misconceptions include the disappearance of diseases that require vaccination, giving the child several vaccines overloading their immune system, diphtheria-tetanus-pertussis vaccine leading to sudden infant death syndrome and many others.[12]

The studies are inconsistent when it comes to the correlation between vaccine hesitancy and educational levels. In some countries such as Italy, Canada, and India, people with higher education levels were less likely to be vaccine-hesitant, while studies from Saudi Arabia, Norway, and Kazakhstan show that higher education levels are predictive of vaccine hesitancy.[13-18] Thus, this study aimed to explore the perceptions of highly educated Kazakhstani mothers about childhood vaccination hesitancy.

## Materials and Methods

This thematic analysis study reports the results of a survey distributed online in Kazakhstan (KZ) from January to February 2023. A purposive sampling strategy was used to recruit the participants. A total of 95 participants comprehensively answered the free-text questions. The target population consisted of Kazakhstani mothers with a university level of education who were identified as vaccine-hesitant, and presently with at least one child. Consent to participate was also included as a criterion for participation. The researchers identified the samples to be vaccine hesitant based on their responses on the survey quantitative question "Overall, how hesitant about childhood vaccination would you consider yourself to be?" (from a zero to 10 scale). Accordingly, the participants who rated their hesitancy level seven to 10 were considered vaccine-hesitant. Women who cannot write, are married without a child, have not finished a university level, and don't know how to use computers were excluded from the study. In addition, the participants who were identified as vaccine-hesitant but did not provide answers to the open-ended questions were not included.

The researchers implemented online recruitment by sending a message through Nazarbayev University group email and social media. The recruitment message contained information about the study and the link to the informed consent. The contact information of the main investigator (PI) was indicated in the recruitment email, and participants were encouraged to send a message to the PI if they had any questions or clarifications about the study. Those who clicked "I agree to participate" in the informed consent were brought to the online survey. In contrast, those who clicked "I do not agree to participate" were directed to the disqualification page of the survey.

An online self-administered questionnaire in Kazakh and Russian languages was developed for data collection. The online questionnaire collected quantitative and qualitative data on vaccine hesitancy. Only the qualitative data, which was gathered using open-ended questions ("How important is childhood vaccination? Please explain your answer.") and a comment section ("Please provide any comments that you have about childhood vaccination") in the survey, were reported in this article. The participants' responses to these questions elicited rich data on the perception of the participants on childhood vaccination hesitancy. The instruction to provide detailed responses to these questions was added to the survey. Experts in medicine, nursing, and vaccines evaluated the questionnaire. The questionnaire was piloted before it was distributed electronically through an online portal. Online surveys in qualitative studies are unique compared to other qualitative research methods because they allow for gathering data from a geographically diverse sample and ensure high anonymity.[19, 20] This approach makes them an excellent method for investigating a phenomenon that is not well understood and is sensitive, such as the perception of parents on childhood vaccines. By using online surveys, researchers maintained the depth of qualitative methods while giving a voice to a more significant number of individuals, including participants who might be incapable of participating due to distance or personal obligations related to work and family.[21] This broad perspective also includes individuals' perspectives on social issues or are concerned about being publicly exposed, which is typical of those people with a visible difference.[22]

The analysis of the free-text responses followed a semantic thematic analysis approach.[23] Getting acquainted with the data was the focus of the first step of the analysis. The researchers reviewed the data several times to obtain a feel of the content. The researchers manually coded the data. The codes were then produced when the researcher became acquainted with the data. Codes are designations applied to data segments with a common meaning. The next step was to

apply the codes to the data that had been generated. The researchers reviewed the data and assigned the correct code to each segment corresponding to that code. Initial themes were produced when all the codes were applied to the data. The researchers reviewed the data to ensure that all relevant segments were included in the suitable themes; then, they grouped similar themes into more significant categories. Finally, the themes were defined and named.

Strategies for ensuring trustworthiness in qualitative research were considered.[24] Credibility was ensured by using a consistent qualitative analysis method; the researchers built confidence by communicating regularly and organizing analytical notes into a codebook throughout the analysis process. Confirmability was ensured by acknowledging the limits inherent in the analysis of the online open-ended survey questions, as well as the biases and backgrounds of the researchers. The increase in transferability and reliability was accomplished by providing a detailed description of the data analysis methods used, and a large sample size of participants.

The study received approval from the Nazarbayev University School of Medicine Institutional Research Ethics Committee (NUSOM-IREC2022NOV#16), and the participants provided informed consent to partake in the study after receiving a comprehensive explanation of the study objectives and methodology. Their participation was entirely voluntary. Participants' anonymity was preserved.

## Results

All participants had a university level of education. Nearly half of the participants were 30 to 39 years of age (49.5%). Most of them were residing in the central region of the country (Astana city, Akmola oblast', Karagandy; 71.6%). Over half of the participants had at least two children (57.9%) (Table 1).

Childhood vaccine hesitancy is the parent's refusal to vaccinate their children against vaccine-preventable diseases despite the availability of vaccines. This study included perceptions from 95 Kazakh mothers with higher education in the analysis. From the in-depth analysis of the data, 285 initial codes were extracted. The combination of similar meanings and concept codes leads to 14 sub-themes, finally yielding four significant themes: misconceptions about childhood vaccination, fear of the effect of the vaccine on children, distrust of the healthcare system and social learning factors (Table 2).

**Table 1:** Demographic characteristics of the participants

| Characteristics | N (%) |
|---|---|
| Age | |
| 18–29 years | 33 (34.7) |
| 30–39 years | 47 (49.5) |
| 40–49 years | 13 (13.7) |
| 50–59 years | 2 (2.1) |
| Region in Kazakhstan | |
| Central (Astana city, Akmola oblast', Karagandy) | 68 (71.6) |
| North Kazakhstan (Pavlodar, Kostanay) | 8 (8.4) |
| West Kazakhstan (Aktobe, Atyrau, Mangystau) | 1 (1.1) |
| East Kazakhstan | 5 (5.3) |
| South Kazakhstan (Almaty, Zhambyl, Kyzylorda, Turkestan) | 13 (13.7) |
| Number of Children | |
| 1 | 40 (42.1) |
| 2 | 33 (34.7) |
| 3 | 16 (16.8) |
| 4 | 4 (4.2) |
| 5 | 1 (1.1) |
| 6 | 1 (1.1) |

**Table 2:** Sub-themes and themes generated from the data

| Sub-Themes | Themes |
|---|---|
| Interference of vaccine with the development of natural immunity in children<br>Development of vaccines solely for the profit of pharmaceutical companies<br>Babies' acquired immunity from parents who acquired a disease | Misconceptions about Childhood Vaccination |
| Not rigorously tested vaccines<br>Probability of children's disability after vaccination<br>Lack of evidence-based effect of the vaccine | Fear of the Effect of Vaccines on Children |
| Problems in vaccine procurement<br>Vaccine quality based on the country of origin<br>Approach of the medical practitioner<br>Failure of healthcare providers to fulfill their duties<br>Incompetent medical practitioners | Distrust to the Healthcare System |
| Spread of misinformation about vaccines<br>Misinformation from healthcare providers<br>Family and peer influence | Social Learning Factors |

*1. Misconceptions about Childhood Vaccination*

Kazakh mothers do not want their children vaccinated because of their misconceptions about childhood vaccination. Their misconceptions about the effects of childhood vaccination on children are a critical factor in vaccine hesitancy.

*1.a. Interference of Vaccine with the Development of Natural Immunity in Children*

Some mothers believe that vaccines can interfere with the development of natural immunity in children. They may believe that vaccines provide only temporary immunity and that natural immunity is better for their child's long-term health.

*"The body itself should produce immunity, and until one year of age, the child's immunity develops naturally, and vaccines hinder that process."* (Mother belongs to the age group 40-49, from Central KZ with three children)

*1.b. Development of Vaccines Solely for the Profit of Pharmaceutical Companies*

Another misconception of the mothers is that vaccines are developed solely for the profit of pharmaceutical companies. Thus, the parent sees that the vaccine is given to weaken the children's immune system. Also, parents believe that there is a dearth of studies by companies on the effect of childhood vaccination on children, and the results are not transparent.

*"Vaccination is a remnant of pre-Soviet and Soviet times and Western commercial medicine. The purpose of vaccinating people is not to take care of people but to take care of corporate interests or other "good" intentions."* (Mother belongs to the age group 30-39, from Central KZ with two children)

*1.c. Babies' Acquired Immunity from Parents who Acquired a Disease*

The parents believe babies have acquired immunity from parents who acquired a disease, such as COVID-19, during pregnancy.

*"From birth, pediatricians did not offer such a thing, and there was no need since we had Covid again 2-3 times."* (Mother belongs to the age group 40-49, from Central KZ with a child)

*2. Fear of the Effect of Vaccines on Children*

One factor contributing to vaccine hesitancy is the perception that vaccines may negatively affect children's immunity and health as they perceive that the vaccine is not safe or effective for their children. The participants fear the effects of vaccines on their children due to several reasons.

*2.a. Not Rigorously Tested Vaccines*

The participants perceived that childhood vaccines are not rigorously tested and

monitored in medicine, making them unsafe and ineffective before being approved.

*"In our case, vaccinations only worsened the health of the child. It was after vaccination that the child's illnesses worsened."* (Mother belongs to the age group 28-29, from South KZ with a child)

*"Strongly against vaccination of children against the disease because my health deteriorated after being vaccinated against the vaccine. Forced to be vaccinated under the threat of being fired."* (Mother belongs to the age group 30-39, from Central KZ with two children)

*2.b. Probability of Children's Disability After Vaccination*

There is a common fear among some parents that their children may become disabled after vaccination. Some parents may also hesitate to vaccinate their children due to the fear of death or other serious adverse events.

*"After the vaccine, many children become autistic, and autistic symptoms appear. I heard it happened with some of my friends' children. No thanks."* (Mother belongs to the age group 30-39, from East KZ with a child)

*"Now, there are many diseases, for example Autism, and everyone associates this with vaccinations. For this reason, I did not vaccinate my third child."* (Mother belongs to the age group 30-39, from Central KZ with a child)

*2.c. Lack of Evidence-based Effect of the Vaccine*

Another fear of the participants is the lack of evidence-based effect of the vaccine on children. This concern about the effectiveness of vaccines affects the participant's perception since they do not see the direct impact of the vaccine on their child's health. They are concerned about the severity or frequency of side effects of the vaccine. This notion of the participant leads to mistrust in the safety and effectiveness of the vaccine.

*"Vaccines are not fully researched; I can't trust them about provision of child's health."* (Mother belongs to the age group 30-39, from Central KZ with three children)

*3. Distrust to the Healthcare System*

One identified reason for the mothers' childhood vaccination hesitancy is their distrust of the healthcare system. The participants identified several reasons for their distrust of their healthcare about childhood vaccination.

*3.a. Problems in Vaccine Procurement*

The lack of trust in governmental health agencies is due to problems in the procurement of vaccines, such as delays or concerns about the quality of vaccines. The concerns of the parents result in lower confidence in the vaccines, as well as the medical practitioners who are administering them.

*"Unfortunately, our vaccines are not very good products, and the schedule for getting the vaccines is unclear! For example, I still wonder when and what my children should receive, what and when they should do them, and where to find out which ones they received and should receive ... everything is chaotic! ..."* (Mother belongs to the age group 18-29, from Central KZ with two children)

*"...The main thing is they did not procure high-quality, proven, and certified vaccines from developed countries, but they buy vaccines from developing countries with a low level of healthcare."* (Mother belongs to the age group 18-29, from West KZ with a child)

*3.b. Vaccine Quality Based on the Country of Origin*

The parents also question the vaccine quality based on the country of origin. Some parents perceive that vaccine effectiveness varies depending on the country where the vaccine was produced. Parents' concerns about the origin of the vaccine led to mistrust in the efficacy and safety of the vaccine.

*"I am more concerned about the quality of the vaccines. I remember that from 2011 to*

*2013 many children acquired serious diseases due to poor-quality vaccines imported from Indonesia. Later, a journalistic investigation showed that these vaccines were made with handicrafts and did not meet the standards. This is what I am really afraid of. It is very unfortunate if a woman, following all the recommendations, tries to bear a healthy child, provides him with decent care after birth, and some poor-quality vaccine can end the child's health or life."* (Mother belongs to the age group 18-29, from West KZ with four children)

*"I also do not trust the country of manufacture (for example, India) and I have the right to do so."* (Mother belongs to the age group 30-39, from Central KZ with a child)

*3.c. Approach of the Medical Practitioner*

During vaccine administration, mothers have concerns about the approach of the medical practitioner. Before vaccine administration, the mother observed no proper assessment of the child's medical history, current health status, and potential risk factors. Failure to conduct a thorough assessment can lead to adverse reactions or complications, eroding trust in medical practitioners. Also, medical practitioners are considered incompetent due to their failure to perform assessments, approaches, and attitudes.

*"Our doctors only vaccinate the child according to the schedule and protocol for a show, without examining, without determining the child's general condition. I believe that before giving this or that vaccine, medical staff is obliged to check the general health of the child with the help of tests and only then vaccinate! not just to close the case and hand over these pieces of paper."* (Mother belongs to the age group 18-29, from East KZ with a child)

*"My position is very ambiguous; I do not trust doctors after I experienced obstetric aggression against myself during childbirth. I do not trust GPs who cannot articulate their thoughts correctly, let alone cure someone."* (Mother belongs to the age group 30-39, from East KZ with a child)

Also, the mothers mistrust medical practitioners due to vaccine trauma.

*"I am not an anti-vaxxer, but I do not trust our doctors. There were many cases when people suffered from the mistakes of doctors. Take, for example, the case of HIV infection of children in the south of the country in the 2000s. How many children have suffered, and how many families have broken up? These children depend on drugs for the rest of their lives. And what happened to those bad guys? If they and their children were also infected, it would be at least somehow fair ... I am for vaccination, but only with European vaccines because there is no trust in others."* (Mother belongs to the age group 18-29, from Central KZ with a child)

*3.d. Failure of Healthcare Providers to Fulfill Their Duties*

In addition, reluctance towards childhood vaccination can be attributed to the failure of healthcare providers to fulfill their duties. According to participants, healthcare providers are forcing the parents to vaccinate their children without proper assessment and explanation. As a result, the participants feel their right to make informed decisions about their child's vaccination is being disregarded. They feel that healthcare providers are not respecting their rights or providing sufficient information about the advantages and drawbacks of vaccines, which can undermine trust and contribute to vaccine hesitancy.

*"My doctor often insists on vaccinations. Due to bad experiences in the family, the consequences after vaccination caused a strong setback in the child's development."* (Mother belongs to the age group 30-39, from South KZ with three children)

*3.e. Incompetent Medical Practitioners*

Another reason for the mothers' childhood vaccine hesitancy is the incompetent medical practitioners. Most parents observe that medical practitioners are not communicating effectively about vaccines. This notion

resulted in a lack of confidence in the safety and effectiveness of the vaccine for the participants.

*"Incompetent doctors. Now in our time, there are many birth injuries, and the consequences of childbirth are very deplorable. When you start asking questions, for example, about the expiration date of the vaccine, they roll their eye. It is unnecessary, and there are no exact and detailed answers."* (Mother belongs to the age group 30-39, from Central KZ with five children)

*4. Social Learning Factors*

Social learning factors can play a significant role in shaping the attitudes and behaviors of mothers toward childhood vaccines. Parents are more likely to trust and follow the advice of individuals they perceive as credible or influential in society and social media.

*4.a. Spread of Misinformation about Vaccines*

Social media platforms and other online forums can facilitate the spread of misinformation about vaccines. The participants sought information and advice from online communities sharing their views on vaccines.

*"Now there are open spaces like Instagram / TikTok, where the issue of vaccination is raised and more than 1000 real commentators who write more negative reviews about vaccination than positive ones."* (Mother belongs to the age group 30-39, from Central KZ with two children)

*4.b. Misinformation from Healthcare Providers*

Some healthcare providers or alternative medicine practitioners may spread misinformation or promote anti-vaccine beliefs, influencing vaccine hesitancy.

*"... different doctors express different opinions; naturally, I cannot decide to vaccinate my child..."* (Mother belongs to the age group 30-39, from East KZ with four children)

*4.c. Family and Peer Influence*

Family and peer influence can be a factor in shaping vaccine hesitancy among parents. Childhood vaccine-hesitant parents were influenced by other parents, family, and peers in their social circles who share their concerns about vaccines.

*"We do not go for the vaccine because one of my family members has a case of cerebral palsy after being vaccinated in the age of three years. He is now in his 40s and is disabled. Since 1983, no one in our family has been vaccinated or sick with anything, not even chickenpox."* (Mother belongs to the age group 18-29, from North KZ with a child)

## Discussion

The findings revealed four main themes that describe their perception of childhood vaccination: misconceptions about the vaccines, concerns about the effect of the vaccination, distrust in the healthcare system, and social learning factors.

The first extracted theme was misconceptions related to childhood vaccines. This finding is supported by that of a systematic review on parental childhood vaccine hesitancy in a previous study.[25] Accordingly, many studies have reported that parents' misconceptions, such as myths, rumors, and conspiracy theories, hinder childhood vaccination.[25] In general, there is much incorrect information surrounding the topic of vaccines, and some of them that were included in this study were the negative motives of the vaccine-producing companies and the fact that the natural immunity of children protects them from diseases without interference with vaccines. Other parental misconceptions may include vaccines leading to the development of Autism or autoimmune diseases in children, vaccines containing fragments of human DNA, aluminium or mercury, and vaccines having life-threatening side effects.[26] Letting the child's natural immunity develop rather than vaccinating children can be a dangerous assumption since children's immune system is considered susceptible to vaccine-preventable infections and their

devastating consequences.[26] A previous study compared innate and adaptive immune responses of vaccinated and non-vaccinated children and no significant difference was found, indicating that vaccines do not alter or weaken the child's immune system.[27] Another misconception about childhood vaccination highlighted in this study is that vaccines are developed to generate more profit for pharmaceutical companies. This idea can be considered conspirational thinking as mothers thought that certain decisions relevant to vaccine development are backed up by suspicious motives made by influential figures, in this case, pharmaceutical companies that manufacture vaccines. A study argued that conspirational thinking positively correlates with delayed vaccination of children.[28]

The next theme was the perception of the effects of vaccination. The study found that mothers were concerned about the safety and effectiveness of vaccines and the possibility of the child having adverse effects such as Autism, disabilities, and death. Moreover, these perceptions were justified by the experiences of other people the respondents knew or heard of, such as family members or friends. One study reported how individual and social groups influence childhood vaccination, including the critical role of parents' beliefs about the effectiveness and safety of the vaccine.[25] The public concerns over the safety and effectiveness of childhood vaccines are especially relevant since UNICEF has reported that the perceptions of the significance and confidence in vaccines have declined during the recent COVID-19 pandemic.[29] Worrying about the adverse side effects of vaccinations is closely linked to the topic of misconceptions about vaccines. As mentioned previously, ideas that childhood vaccines cause autism, autoimmune or neurodegenerative diseases, and death are incorrect and have been proven so by many studies.[30-32] However, as shown in the current study, some mothers also claimed that there were few studies on the adverse effects of vaccines.

Distrust in the healthcare system and providers is the third theme influencing the mothers' perception of childhood vaccination. Several previous studies have shown that healthcare providers are considered the primary and more influential source of vaccination information, and people who trust local healthcare agencies and staff are more likely to be vaccine-confident.[18, 33, 34] Our study has identified that mothers questioned the skills and knowledge of the medical workers and the quality of the vaccines purchased by the government. Specifically, the absence of thorough physical examinations and blood tests before vaccination, poor quality, and concerns over the country of the origin of vaccines were mentioned. According to the Centers for Disease Control and Prevention asking the parent several questions regarding the physical state and health of the child or teen is sufficient to decide to administer the vaccine without additional tests.[35] Therefore, as information providers, medical workers can educate the parents about the required procedures before child immunization. Regarding the concerns about the manufacturing country of vaccines, a study conducted in Kazakhstan found that individuals are more likely to trust vaccines from Germany, the US, and France, while vaccines produced in India and China were the least trusted ones.[36]

Finally, social learning factors were the fourth theme that emerged from the analysis. This theme included determinants such as misinformation or reported negative experiences of vaccination learned through social media or friend and family relations. The experiential knowledge or advice other parents give can be more influential in deciding on vaccination than scientific evidence.[3] Moreover, a previous study found that parents who treat social media and the Internet as the primary source of information regarding childhood vaccinations are more likely to have negative views towards immunization; one possible reason is that the content found on social media about vaccination is predominantly harmful.[37] Regarding friend

and family relations, it was found that individuals whose family members were not vaccinated were more likely to be vaccine-hesitant, which suggests that opinions of the individual's surroundings play an essential role in their decision-making process.[38]

We acknowledge some limitations that require attention when interpreting and using the findings of this study. Through open-ended survey questions, the data collection method may have limited a deeper exploration of the participants' experiences, as follow-up questions were impossible to perform. This prompted us to focus on describing the participants' perceptions rather than exploring their experiences. The participants were limited to mothers who attained university-level education; thus, the findings can only be used in this population group. Future studies should focus on mothers with lower levels of education, as well as on fathers. This study provides valuable insights into the decision-making process of highly educated women on childhood vaccination. Another strength of the study is the inclusion of the opinions of many participants from different parts of the country, which enriches the data collected about the phenomenon being studied.

## Conclusion

Highly educated Kazakhstani mothers' perceptions including misconceptions about vaccines, concerns about the effects the vaccines have on the child's health, distrust in the healthcare system and providers, and social learning factors may lead to behaviors of delaying and refusing some or all childhood vaccines. Identifying and understanding the factors that affect the mothers' perception of childhood vaccination will help improve vaccine uptake in the country by creating effective strategies to increase trust in vaccines.

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**Conflict of Interest:** None declared.

## References

1 KazInform International News Agency. Measles situation worsens in Kazakhstan. Kazakhstan: KazInform International News Agency; 2023. [Cited 1 Mar 2024]. Available from: https://www.inform.kz/en/measles-situation-worsens-in-kazakhstan_a4050052

2 Schmid P, Rauber D, Betsch C, et al. Barriers of influenza vaccination intention and behavior–a systematic review of influenza vaccine hesitancy, 2005–2016. PLoS One. 2017;12:e0170550.

3 Dubé È, Gagnon D, MacDonald N, et al. Underlying factors impacting vaccine hesitancy in high income countries: a review of qualitative studies. Expert Review of Vaccines. 2018;17:989-1004.

4 McGregor S, Goldman RD. Determinants of parental vaccine hesitancy. Canadian Family Physician. 2021;67:339-41.

5 Liu B, You J, Huang L, et al. The 100 Most-Cited Articles in COVID-19 Vaccine Hesitancy Based on Web of Science: A Bibliometric Analysis. Infection and Drug Resistance. 2023;16;2625-46.

6 Fournet N, Mollema L, Ruijs WL, et al. Under-vaccinated groups in Europe and their beliefs, attitudes and reasons for non-vaccination; two systematic reviews. BMC Public Health. 2018;18:196.

7 Du M, Tao L, Liu J. Association between risk perception and influenza vaccine hesitancy for children among reproductive women in China during the COVID-19 pandemic: a national online survey. BMC Public Health. 2022;22:385.

8 Latkin C, Dayton LA, Yi G, et al. COVID-19 vaccine intentions in the United States, a social-ecological framework. Vaccine. 2021;39:2288-94.

9 Nowak SA, Gidengil CA, Parker AM, Matthews LJ. Association among trust in health care providers, friends, and family, and vaccine hesitancy. Vaccine.

2021;39:5737-40.
10 Jaiswal J, Halkitis PN. Towards a more inclusive and dynamic understanding of medical mistrust informed by science. Behavioral Medicine. 2019;45:79-85.
11 Kessler ED, Braasch JL, Kardash CM. Individual differences in revising (and maintaining) accurate and inaccurate beliefs about childhood vaccinations. Discourse Processes. 2019;56:415-28.
12 World Health Organization. Vaccines and immunization: Myths and misconceptions. Geneva: World Health Organization; 2020.
13 Bertoncello C, Ferro A, Fonzo M, et al. Socioeconomic determinants in vaccine hesitancy and vaccine refusal in Italy. Vaccines. 2020;8:276.
14 Gilbert NL, Gilmour H, Wilson SE, Cantin L. Determinants of non-vaccination and incomplete vaccination in Canadian toddlers. Human Vaccines & Immunotherapeutics. 2017;13:1447-53.
15 Agrawal A, Kolhapure S, Di Pasquale A, et al. Vaccine hesitancy as a challenge or vaccine confidence as an opportunity for childhood immunisation in India. Infectious Diseases and Therapy. 2020;9:421-32.
16 Alsubaie SS, Gosadi IM, Alsaadi BM, et al. Vaccine hesitancy among Saudi parents and its determinants: Result from the WHO SAGE working group on vaccine hesitancy survey tool. Saudi Medical Journal. 2019;40:1242-50.
17 Feiring B, Laake I, Molden T, et al. Do parental education and income matter? A nationwide register-based study on HPV vaccine uptake in the school-based immunisation programme in Norway. BMJ Open. 2015;5:e006422.
18 Akhmetzhanova Z, Sazonov V, Riethmacher D, Aljofan M. Vaccine adherence: the rate of hesitancy toward childhood immunization in Kazakhstan. Expert Review of Vaccines. 2020;19:579-84.
19 Regmi PR, Waithaka E, Paudyal A, et al. Guide to the design and application of online questionnaire surveys. Nepal Journal of Epidemiology. 2016;6:640-4.
20 Carter SM, Shih P, Williams J, et al. Conducting qualitative research online: challenges and solutions. The Patient. 2021;14:711-8.
21 Terry G, Hayfield N, Clarke V, Braun V. Thematic analysis. In: Willig C, Rogers WS, editors. The SAGE handbook of qualitative research in psychology. 2nd ed. US: Sage Publications; 2017. p. 17-37.
22 Clarke V, Braun V. Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning. The Psychologist. 2013;26:120-3.
23 Braun V, Clarke V. Reflecting on reflexive thematic analysis. Qualitative Research in Sport, Exercise and Health. 2019;11:589-97.
24 Shenton AK. Strategies for ensuring trustworthiness in qualitative research projects. Education for Information. 2004;22:63-75.
25 Obohwemu K, Christie-de Jong F, Ling J. Parental childhood vaccine hesitancy and predicting uptake of vaccinations: a systematic review. Primary Health Care Research & Development. 2022;23:e68.
26 Geoghegan S, O'Callaghan KP, Offit PA. Vaccine safety: myths and misinformation. Frontiers in Microbiology. 2020;11:372.
27 Sherrid AM, Ruck CE, Sutherland D, et al. Lack of broad functional differences in immunity in fully vaccinated vs. unvaccinated children. Pediatric Research. 2017;81:601-8.
28 Callaghan T, Motta M, Sylvester S, et al. Parent psychology and the decision to delay childhood vaccination. Social Science and Medicine. 2019;238:112407.
29 United Nations Children's Fund. New data indicates declining confidence in childhood vaccines of up to 44 percentage points in some countries during the COVID-19 pandemic. US: United Nations Children's Fund; 2023.
30 Gabis LV, Attia OL, Goldman M, et al.

The myth of vaccination and autism spectrum. European Journal of Paediatric Neurology. 2022;36:151-8.
31 Müller-Nordhorn J, Hettler-Chen CM, Keil T, Muckelbauer R. Association between sudden infant death syndrome and diphtheria-tetanus-pertussis immunisation: an ecological study. BMC Pediatrics. 2015;15:1.
32 Principi N, Esposito S. Do vaccines have a role as a cause of autoimmune neurological syndromes? Frontiers in Public Health. 2020;8:361.
33 Makarić ZL, Kolarić B, Tomljenović M, Posavec M. Attitudes and beliefs related to childhood vaccinations among parents of 6 years old children in Zagreb, Croatia. Vaccine. 2018;36:7530-5.
34 Alshehry AS, Cruz JP, Alquwez N, et al. Predictors of nursing students' intention to receive COVID-19 vaccination: A multi-university study in Saudi Arabia. Journal of Advanced Nursing. 2022;78:446-57.
35 Centers for Disease Control and Prevention. Screen for Contraindications and Precautions. US: Centers for Disease Control and Prevention; 2019.
36 Issanov A, Akhmetzhanova Z, Riethmacher D, Aljofan M. Knowledge, attitude, and practice toward COVID-19 vaccination in Kazakhstan: a cross-sectional study. Human Vaccines & Immunotherapeutics. 2021;17:3394-400.
37 Cascini F, Pantovic A, Al-Ajlouni YA, et al. Social media and attitudes towards a COVID-19 vaccination: A systematic review of the literature. EClinicalMedicine. 2022;48:101454.
38 Tang S, Liu X, Jia Y, et al. Education level modifies parental hesitancy about COVID-19 vaccinations for their children. Vaccine. 2023;41:496-503.

ORIGINAL ARTICLE

# The Effect of Happiness Educational Program of Fordyce on the Sense of Coherence and Psychological Well-being of Adolescents with a Parent with Cancer: A Randomized Clinical Trial

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## Abstract

**Background:** Having a parent with cancer is one of the risk factors for adolescents, which makes them face many psychological problems. Therefore, this study aimed to determine the effect of Happiness Educational Program of Fordyce on the sense of coherence and psychological well-being of adolescents who have a parent with cancer.

**Methods:** In this randomized clinical trial study, 92 adolescents whose diagnosed parents have referred to the oncology ward of Shahid Rajaei Hospital in Yasuj, from June to September 2021, were selected through the convenience sampling method; however, they were randomly assigned to one of the two groups of the intervention or control. The number of sessions in the intervention group was 6, each consisting of 60 minutes and performed one day a week for 6 weeks. In addition to the demographic information form, the Antonovsky's Sense of Coherence Questionnaire-13 and the Ryff's scale of Psychological Well-being-18 were used before and immediately after the intervention. Data were analyzed through SPSS software, version 21, using statistical tests of Chi-square, t-test, Fisher's exact, Mann-Whitney, and Wilcoxon.

**Results:** After the intervention, statistically significant differences were observed in the median scores of the sense of coherence ($P<0.001$) and psychological well-being ($P<0.001$) between the two groups of intervention and control.

**Conclusion:** Although the Happiness Educational Program of Fordyce could improve the sense of coherence and psychological well-being of adolescents who have a parent with cancer, more investigations are recommended to be conducted.

**Trial Registration Number:** IRCT20210331050795N1.

**Keywords:** Happiness, Sense of coherence, Psychological well-being, Adolescent

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## Introduction

Cancer is a major public health problem worldwide.[1] By the use of the Global Cancer Observatory, about 20 million new cancer cases and 9.7 million deaths were estimated in 2022. The estimated number of people who were alive within 5 years following a cancer diagnosis was 53.5 million. About 1 in 5 people develop cancer in their lifetime.[2] Cancer is the third cause of death in Iran. More than half of cancer deaths occur in developing countries. The annual incidence rate of cancer in Iran is 98 to 100 per 100,000 people.[3]

Parental cancer creates unique challenges for families.[4] Adolescence can be considered a sensitive stage, during which the quality of physical, nutritional, and social environments may change the paths of health and growth to the next stages of life.[5] Having a parent with cancer creates a psychological crisis for teenagers and young adults. These teenagers use mechanisms such as fear, anxiety, perceived stress, depression, sleep disorders, psychosomatic syndromes, hostility, and uncertainty to respond to their parents' cancer.[6] Positive psychology interventions have shown their important effects in increasing passivity.[7] Ryff considers psychological well-being as a person's effort to grow and progress, to flourish his potential abilities. It includes 6 dimensions: Autonomy, Personal Growth, Environmental Mastery, Purpose in Life, Self-Acceptance, and Positive Relations with Others.[8]

Psychological well-being encourages healthy behaviors and makes a person avoid unhealthy behaviors. Key indicators of psychological well-being, such as life satisfaction, purpose in life, and optimism, are associated with improved health outcomes.[9] The sense of coherence is known as one of the important factors in the psychological adaptation of cancer patients. Antonovsky states that the sense of coherence is like a personality trait or a coping trait that is created in early childhood and is strengthened later in life, based on the degree of a person's sense of control over his environment and results.[10] Thus, the sense of coherence is more similar to the situation of confrontation.[11] The sense of coherence is mainly tested and reinforced in childhood and early youth. The years before the age of 30 are the most important period when it comes to developing a sense of coherence. The process of developing a sense of coherence is known as the internalization of external resources that are at an individual's disposal and can ultimately reduce the current need for other resources.[12] Around the world, various cross-sectional studies have shown that a strong sense of coherence improves well-being.[13]

The happiness educational program improves the cognitive and emotional state of patients and allows them to adopt a more positive attitude towards life events and respond to challenges with optimism by adapting to changing conditions.[14] People with deeper happiness have a greater sense of coherence. Therefore, you can use programs to increase happiness to promote resilience, happiness, and vitality. One of these programs is Fordyce Happiness Educational Program. This program includes fourteen cognitive and behavioral components.[15] Fordyce's happiness principles include developing a healthy personality, removing the concerns, reducing the expectations and wishes, being the real self, and giving priority to happiness,[16] which leads to certain changes in the cognitive and emotional state of people and helps them adopt a more positive attitude towards life events.[17]

The results of a study showed that Happiness Educational and Performance Program of Fordyce significantly reduced depression scores in hemodialysis patients.[18] Also, Kushlev et al. found that happiness improved physical health and subjective well-being.[19] The results of the other studies showed that the salutogenesis program for adolescents with moyamoya disease effectively improved the generalized resistance resources and sense of coherence in adolescents with moyamoya disease.[20] Also, Cheng et al. found that music breathing, a program based on mindful breathing and music listening therapy, helps

one to cope with stress by promoting a sense of coherence. Individuals will benefit from the long-term effect of this intervention to enhance their sense of coherence to cope with stressful events and promote better mental well-being.[21]

Most mental health problems are formed in adolescence and early adulthood. Adolescents have more cognitive abilities and understanding than school-age children, and they understand their parents' illness and the problems arising from it better. One of the aspects of an adolescent's life that can be affected by these conditions is psychological well-being, and paying more attention to it will provide him with a higher sense of coherence. Adolescents with a parent with cancer experience high levels of changes, including mood and self-confidence, crying, fear, tension, anxiety, worrying, sleep problems, drop in academic performance, individual and social changes.[22] Since many happiness programs have been conducted for chronic patients and have had a positive effect,[18, 23] considering the effects of parental illness on adolescents and the lack of studies in this field, this study was conducted to examine the effect of the Fordyce Happiness Educational Program on the sense of coherence and psychological well-being of adolescents who have a parent with cancer.

## Methods

The present study is a randomized clinical trial study in which 110 adolescents with parents suffering from cancer who referred to the oncology ward of Shahid Rajaei Hospital in Yasuj, from June to September 2021, was assessed for eligibility. Ninety-two eligible adolescents who met the inclusion criteria were randomly assigned to one of the two groups of the intervention (n=46) or the control (n=46). This was done using random allocation software; the adolescents were assigned by permuted block random allocation with 23 equal-sized blocks (4 subjects).

Sample size was calculated based on the following statistical formula while considering the parameters: $\alpha$=0.05, 1-$\alpha$=0.95, $z_{1-\alpha/2}$=1.96, $\beta$=0.2, 1-$\beta$=0.8, $z_{1-\beta}$=0.85, and d=0.6 or effect size (mean difference in term of clinical important) based on proposed values of the effect size by Cohen for t-test for the mean difference between two independent groups.[22] Finally, the sample size was estimated to be 43 participants for each group and a total of 92 participants ($n_{1=}$46, $n_{2=}$46) were finally considered with 5% drop out.

$$n = \frac{2 * [(z_{1-\alpha/2}) + (z_{1-\beta})]^2}{d^2}$$

Only the participants including the parents and their adolescent who signed their informed consent forms participated in this study. The scores of the Sense of Coherence ≤52[23] based on Antonovsky's questionnaire, scores of psychological well-being ≤91[24] based on the Ryff's scale, lack of past medical history of psychologic disorders such as anxiety or depression, one of the parents suffering from cancer, at least six months passed since the definite diagnosis of the parent's cancer by an oncologist, only one teenager from each family with a parent with cancer, and adolescents aged 13 to 18 years were also considered as the inclusion criteria. The lack of the adolescent or family members' knowledge about the parent's cancer, failure to attend more than two sessions of the intervention, and unwillingness to continue the intervention were the exclusion criteria (Figure 1).

In addition to demographic information such as adolescent age, adolescent sex, number of children in the family, age of affected parent, gender of affected parent, level of education of affected parent, occupation of affected parent, marital status of affected parent, time of parent's cancer diagnosis, cancer recurrence, stage of treatment, type of treatment and difficulty in parent's communication with the adolescent, the Antonovsky's Sense of Coherence Questionnaire (SOC) with 13 items and the Ryff's scale of Psychological well-being with 18 items were applied to collect the data.

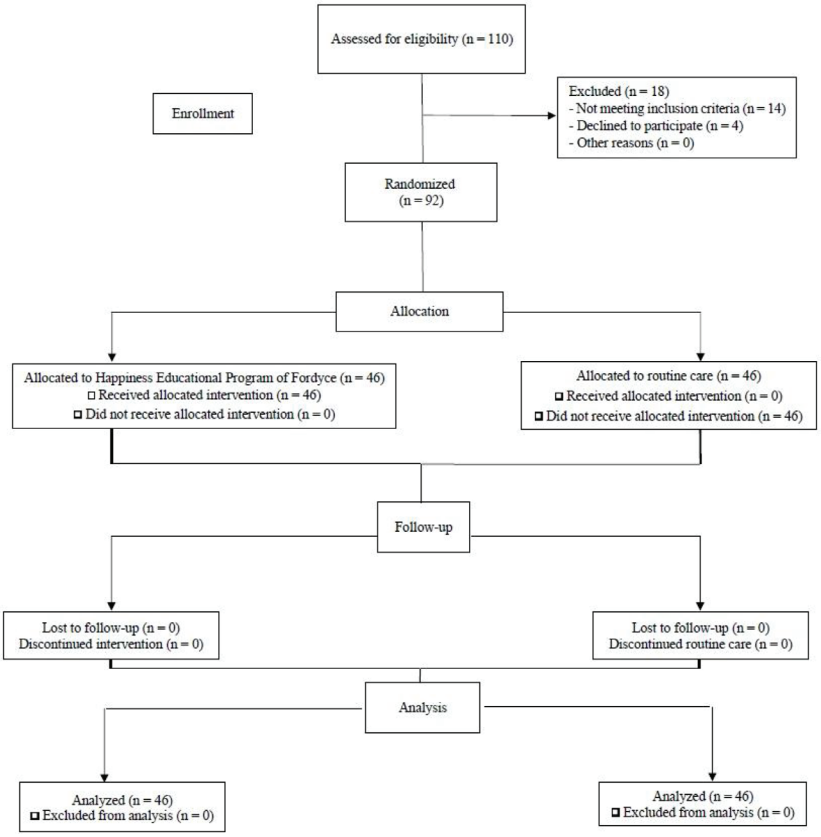


**Figure 1:** CONSORT flow chart of the study

The SOC-13 was prepared by Antonovsky; it contains three subscales: Comprehensibility, Manageability, and Meaningfulness. The items in this questionnaire are scored using a 7-point Likert scale, from 1 (unwillingness) to 7 (strong willingness). This scoring is reversed in some items. For the total score of the questionnaire, the total scores of all questions are added together. This score has a range from 13 to 91. The higher the score, the higher the sense of coherence of the respondent and vice versa. The cut-off points include: the scores between 13 and 26 indicate a low sense of coherence, scores of 27 to 52 indicate a medium sense of coherence, and scores above 52 show a high sense of coherence. The higher this score is above 52, the higher the individual's sense of coherence will be, and vice versa.[25] The α values ranged from 0.70 to 0.92 in 127 studies using the SOC-13 and from 0.35 to 0.91 in 60 studies using the modified SOC scale. Test-retest correlations show stability and range from 0.69 to 0.78 (1 year), 0.64 (3 years), 0.42 to 0.45 (4 years), 0.59 to 0.67 (5 years) to 0.54 (10 years).[26] The validity and reliability of this questionnaire in Iran have been examined by Mahammadzadeh et al. The results of concurrent validity showed a correlation of 0.54 between the scores obtained from the sense of coherence with hardiness scores at a significance level of 0.01. The results related to the construct validity also show that the first item of the sense of coherence questionnaire with a value of 3.55 determines the highest variance (27.34) of the tool, in comparison with other factors, which indicates the acceptable validity of the sense of coherence questionnaire. Also, the findings showed that this questionnaire was reliable with Cronbach's alpha coefficient of 0.77.[23] Cronbach's alpha coefficient of this questionnaire was re-examined and reported to be 0.75.

The Ryff's scale of psychological well-being-18 was developed by Ryff. The items are scored using a 6-point Likert scale, ranging from 1 (*strongly disagree*) to 6 (*strongly agree*).

Therefore, the total score is in the range of 18–108, with higher scores representing greater well-being. This scale has 6 subscales: Autonomy, Personal Growth, Environmental Mastery, Purpose in Life, Self-Acceptance, and Positive Relations with Others.[27, 28] In the National Survey of Families and Households (NSFH) II, the uncorrected correlations ranged from 0.65 to 0.98 although most (73.3%) were in the 0.65–0.81 range. The corrected latent correlations became substantially higher, ranging from 0.87 to 0.99. For Midlife in the United States (MIDUS) Series, the uncorrected latent correlations were notably lower, ranging from 0.48 to 0.87, with most (80%) being under 0.78, but corrected correlations became substantially higher, ranging from 0.76 to 0.96.[29] The validity and reliability of this questionnaire in Iran have been investigated by Khanjani et al. The correlation of the short version of this scale with the main scale has fluctuated from 0.70 to 0.89 percent. Its reliability has been confirmed using Cronbach's alpha coefficient of 0.71.[24] Cronbach's alpha coefficient of this scale was checked again by the researcher and reported to be 0.81.

After the approval of the research plan in the ethics committee of the university and obtaining the relevant letter of introduction, the researcher attended the oncology's ward of Shahid Rajaei Hospital to select the research units in the morning and evening shifts; after interviewing the cancer patients and introducing himself, the researcher carefully examined them in terms of the inclusion criteria if they had a child in the age range of the research. Then, a written and informed consent form was completed by the parent and the adolescents. Adolescents were randomly allocated to two intervention and control groups. The setting for education was also a room in Shahid Rajaei Hospital to observe the privacy of the adolescents. The number of sessions in the intervention group was 6, each consisting of 60 minutes and performed one day a week for 6 weeks. Interventions were performed in groups of 5 to 10 people. In the intervention group, Fordyce's Happiness Educational Program[30] was implemented by the researcher with the help of a clinical psychologist using the methods of lectures, group discussions, questions and answers, and brainstorming. In short, they were covered in 6 sessions (Table 1).

In addition to the mentioned education sessions, the researcher provided the Fordyce Happiness Educational Program in the form of pamphlets to the intervention group at the end of each session. There was no intervention in the control group; however, the pamphlets about the Fordyce happiness were given them after completing the study. It should be noted that for prevention of data dissemination between the two groups, the intervention group was measured and evaluated on even days and the control group on odd days so that the participating members in both groups are not related to each other.

In addition to the baseline or pre-intervention, the sense of coherence and psychological well-being were assessed at the end of the intervention. Data were analyzed through IBM SPSS statistical samples version 21, using descriptive and inferential statistic. Chi-square test was used for nominal variables. Independent t-test was used for quantitative data. Normality of data was assessed by Kolmogorov-Smirnov test. The results of Mann-Whitney U test and Wilcoxon test

**Table 1:** Protocol of happiness educational program of Fordyce

| Time | Content |
|---|---|
| 1st session | Introduction, definition of happiness, its necessity and importance |
| 2nd session | Learning to spend more time in social gatherings and do social activities |
| 3rd session | Principles of better planning and organization |
| 4th session | Teaching the principles of positive and optimistic thinking |
| 5th session | Teaching the principles of developing social and extroverted personality |
| 6th session | Teaching the principles of sincere communication as the most important source of happiness |

were respectively reported for between-group and within-group comparisons of outcome variables due to lack of normal distribution. P-value less than 0.05 was considered as the statistical significance. Data collector and analyzer were blinded to the allocation of the participants in the two groups.

The current study was confirmed by the Research Ethics Committee (REC) of Yasuj University of Medical Sciences (YUMS) with the code of IR.YUMS.REC.1400.050. The purpose of the study was explained prior to the start of the sampling. Then, written informed consent was signed by both adolescents and their parents. The confidentiality of the collected data, voluntary participation in the study, and free withdrawal at each stage of the study without any effects on the treatment process were considered. The subject and his/her legal guardian were informed of all the information that could be effective in his/her decision, such as the title and objectives of the research, duration of the research, research method, etc. Parents were given the right to accompany their adolescents during the research. Information was given to the participants if they desired to know the results of the research. No cost was imposed on patients, insurance institutions, and healthcare centers. The interventions were carried out in compliance with the protective guidelines of Covid-19.

## Results

Ninety-two adolescents (48.9% male versus 51.1% female with a mean age of 15.31±2.97 years) with parents with cancer (38% father versus 62% mother) completed the present study. No statistically significant differences were observed in their demographic characteristics (except education level of the affected parent) between the two groups (Table 2).

The state of the distribution of the outcome variable was assessed using the Kolmogorov-Smirnov statistical test. Because the distribution of the scores of the outcome variables did not have a normal distribution, the results of the non-parametric tests including Mann-Whitney U test and independents samples Median test were reported for mean rank and median scores of outcome variables, respectively.

Mann-Whitney U test showed no statistically significant differences for the mean rank of the sense of coherence before

**Table 2**: Participants' characteristics by the groups

| Variable / Group | | Intervention | Control | P value |
|---|---|---|---|---|
| Age (year), Mean±SD | Adolescent | 15.1±2.74 | 15.5±2.13 | 0.5* |
| | Affected parent | 47.76±8.92 | 49.58±13.29 | 0.4* |
| Duration of diagnosis of disease (month), Mean±SD | | 24.19±20.8 | 27.3±26.16 | 0.3* |
| Adolescent gender, n (%) | Male | 24 (52.2) | 21 (45.7) | 0.6** |
| | Female | 22 (47.8) | 25 (44.3) | |
| Gender of the Affected parent, n (%) | Father | 17 (37) | 18 (39.1) | 1** |
| | Mother | 29 (63) | 28 (60.9) | |
| Occupation of Affected parent, n (%) | Unemployed | 41 (89.1) | 37 (80.4) | 0.38** |
| | Employed | 5 (10.9) | 9 (19.6) | |
| Education of the Affected parent, n (%) | Under Diploma | 14 (30.4) | 27 (58.7) | 0.002*** |
| | Diploma | 30 (65.3) | 13 (28.3) | |
| | College degree | 2 (4.3) | 6 (13) | |
| Diagnosis, n (%) | Non metastatic | 31 (67.4) | 26 (56.5) | 0.39** |
| | Metastatic | 15 (32.6) | 20 (43.5) | |
| Treatment, n (%) | Chemotherapy | 29 (63) | 22 (47.8) | 0.2*** |
| | Radiotherapy | 4 (8.7) | 2 (4.3) | |
| | Surgery | 2 (4.3) | 3 (6.5) | |
| | Combined treatment | 11 (23.9) | 19 (41.3) | |

*Independent t-test; **Fisher Exact test;***Chi-square test

the intervention. Between-group comparison for median scores of the sense of coherence using independent samples median test also showed no significant differences between the two groups before the intervention (P>0.05); however, a statistically significant difference was observed at the end of the intervention between the two groups (P<0.05). In addition, the result of the Wilcoxon test for within-group comparison indicated a statistically significant difference in the mean rank scores of the sense of coherence and its dimensions in the intervention group at the end of the intervention compared with pre-intervention (P<0.05) (Table 3).

No statistically significant differences were

**Table 3:** Comparison of the sense of coherence and its subscales between and within the intervention and control groups

| Variable | | Intervention | | Control | | P value* |
|---|---|---|---|---|---|---|
| | | Range | Median (IQR)[a] | Range | Median (IQR) | |
| Total sense of coherence | Before | 40-50 | 45 (2.75) | 41-48 | 45 (3) | 0.841 |
| | After | 48-61 | 55.5 (3) | 41-48 | 45 (3) | <0.001 |
| | P value** | <0.001 | | 1 | | |
| Comprehensibility | Before | 10-14 | 12 (2) | 10-14 | 12 (1.25) | 0.4 |
| | After | 15-24 | 18 (2.25) | 10-14 | 12 (1.25) | 0.001 |
| | P value** | <0.001 | | 1 | | |
| Manageability | Before | 14-18 | 16 (2) | 14-19 | 16 (1) | 0.5 |
| | After | 16-23 | 19 (2) | 14-19 | 16 (1) | <0.001 |
| | P value** | <0.001 | | 1 | | |
| Meaningfulness | Before | 15-18 | 16 (1) | 14-18 | 16 (1) | 0.9 |
| | After | 14-23 | 18 (2) | 14-18 | 16 (1) | <0.001 |
| | P value** | <0.001 | | 1 | | |

*Mann-Whitney U test; **Wilcoxon; [a] Inter-quartile range

**Table 4:** Comparison of psychological well-being and its subscales between and within intervention and control groups

| Variable | | Intervention | | Control | | P value* |
|---|---|---|---|---|---|---|
| | | Range | Median (IQR) [a] | Range | Median (IQR) | |
| Total psychological well-being | Before | 77-85 | 81 (3.25) | 76-85 | 81 (2.25) | 0.6 |
| | After | 74-105 | 95 (2) | 76-85 | 81 (2.25) | <0.001 |
| | P value** | <0.001 | | 1 | | |
| Self-Acceptance | Before | 13-16 | 15 (2) | 13-16 | 15 (1) | 0.5 |
| | After | 13-20 | 16 (3) | 12-16 | 15 (1) | <0.001 |
| | P value** | <0.001 | | 1 | | |
| Environmental Mastery | Before | 13-17 | 15 (1) | 13-17 | 16 (1) | 0.6 |
| | After | 11-20 | 17 (2) | 13-17 | 16 (1) | 0.04 |
| | P value** | <0.001 | | 1 | | |
| Personal Growth | Before | 13-16 | 15 (1) | 13-16 | 15 (2) | 0.6 |
| | After | 8-19 | 16 (2.25) | 13-16 | 15 (2) | 0.005 |
| | P value** | 0.002 | | 1 | | |
| Positive Relationship with others | Before | 8-12 | 10 (2) | 8-12 | 10 (1.25) | 0.6 |
| | After | 10-19 | 16 (3) | 8-12 | 10 (1.25) | <0.001 |
| | P value** | <0.001 | | 1 | | |
| Purpose in Life | Before | 10-13 | 11 (2) | 9-13 | 11 (2) | 0.7 |
| | After | 10-19 | 15 (4) | 9-13 | 11 (2) | <0.001 |
| | P value** | <0.001 | | 1 | | |
| Autonomy | Before | 12-16 | 15 (1) | 13-16 | 15 (1) | 0.09 |
| | After | 10-20 | 15 (2.25) | 13-16 | 15 (1) | <0.001 |
| | P value** | 0.04 | | 1 | | |

*Mann-Whitney U test; **Wilcoxon; [a]Inter-quartile range

observed in the mean rank and median score of psychological well-being using Mann-Whitney U test and independent samples median test, respectively, between the two groups before the intervention (P>0.05); however, a statistically significant differences were observed at the end of the intervention between the two groups (P<0.05). Moreover, the result of Wilcoxon Signed Rank test for within-group comparison indicated a statistically significant difference in the mean rank scores of psychological well-being and its dimensions in the intervention group at the end of the intervention compared with pre-intervention (P<0.05) (Table 4).

## Discussion

This research was conducted to determine the effect of the Fordyce Happiness Educational Program on the sense of coherence and psychological well-being of adolescents who have a parent with cancer. The findings of this study showed that, immediately after the intervention, the Fordyce Happiness Educational Program increased the overall mean score of the sense of coherence of adolescents with a parent with cancer. In this regard, Ghaljaei et al.showed that Fordyce Happiness training program was effective and useful for the competence of mothers of premature infants admitted to the Neonatal Intensive Care Unit and to promote and maintain the mental health of mothers.[31] Also, Barekzaei et al. showed that Fordyce Happiness Training could reduce the depression of mothers of Premature Infants Admitted to the Neonatal Intensive Care Unit.[32] The results of these studies are consistent with those of the present study. The number of intervention sessions in these studies is close to the present study.

Since family relationships have a positive relationship with sense of coherence, there is a triangular relationship between family relationships, sense of coherence and happiness. Sense of coherence has played an important role in achieving happiness. Happiness is an important predictor of health and lifestyle. Happier people have a healthier lifestyle. Therefore, it can be concluded that happiness plays an important role in promoting health.[33] Perhaps one of the reasons for the positive effect of the intervention can be the mentioned cases because by increasing happiness, many mental and psychological problems of adolescents are reduced and they can adapt to difficult and important conditions. According to the results of the present study, Fordyce Happiness Educational Program has improved the sense of coherence in adolescents with a parent with cancer and has reduced stress and psychological pressure on them. In this regard, Mikaeili et al. showed that training on the Fordyce Happiness Program is effective in reducing fatigue perception and increasing the sense of coherence of diabetic patients;[34] also, Da-Silva-Domingues et al. indicated that the sense of coherence was related to health behaviors both as a protective factor against high-risk behaviors and in its positive association with preventive and health-promoting behaviors of adolescents, young adults and university students.[35] These are consistent with the present study.

The results of the present study revealed that immediately after the completion of the intervention, the Fordyce Happiness Educational Program increased the overall mean psychological well-being score of adolescents with a parent with cancer. Sargolzaei et al, showed that happiness training improved thalassemia major patients' psychological well-being.[36] Also, Elham et al. showed that cognitive behavioral therapy focused on insomnia, mindfulness-based cognitive therapy, and Fordyce happiness training could be used in psychiatric centers to increase the affective capital of women with migraine.[37]

Positive psychology focuses on the factors that help promote optimal well-being and examines the functional consequences of these states. Increasing positive emotions leads to social, occupational, and health benefits. Stronger social relationships reduce mortality and help people cope with stressful factors in life.[38] According to the stated content, however, as much as it is possible

to provide happiness to adolescents, the level of their psychological well-being will also increase, and this will improve their mental and psychological condition and their stress and worries. On the other hand, it causes adolescents to take better care of their parents in such conditions. Therefore, the present study showed that the Fordyce Happiness Educational Program, which is a part of positive psychology, promoted positive emotions and helped to improve the psychological well-being of adolescents with a parent with cancer, reducing the level of stress and anxiety in these people.

Consideration of mental health of adolescents who have a parent with cancer is the strength of this study. Cultural, social, economic, and religious factors, the possibility of making mistakes in the self-reporting due to the lack of concentration, and the possibility of non-cooperation and adherence to the implementation of practical plans of the participants due to the conditions and problems in the living environment are among the limitations of this study. Therefore, the generalization of the findings of this study should be done with caution. More studies with a large sample size and a longer period are needed to evaluate the clinical effectiveness of the Fordyce Happiness Educational Program.

## Conclusion

Based on the findings of this research, it can be concluded that the implementation of the Fordyce Happiness Educational Program has a significant effect on promoting the sense of coherence and improving the psychological well-being of adolescents who have a parent with cancer. Therefore, it is suggested that the members of the health team should consider the implementation of this educational program for adolescents who have a parent with cancer and use this useful and beneficial educational program.

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**Conflict of Interest:** None declared.

## References

1 Siegel RL, Miller KD, Jemal A. Cancer statistics, 2016. CA: A Cancer Journal for Clinicians. 2016;66:7-30.
2 Sung H, Ferlay J, Siegel RL, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: A Cancer Journal for Clinicians. 2021;71:209-49.
3 Rafiemanesh H, Zahedi A, Mehtarpour M, et al. Cancer epidemiology and trends in North Khorasan Province of Iran. Clinical Epidemiology and Global Health. 2018;6:51-5.
4 Stafford L, Sinclair M, Turner J, et al. Study protocol for Enhancing Parenting In Cancer (EPIC): development and evaluation of a brief psycho-educational intervention to support parents with cancer who have young children. Pilot and Feasibility Studies. 2017;3:72.
5 Patton GC, Olsson CA, Skirbekk V, et al. Adolescence and the next generation. Nature. 2018;554:458-66.
6 Chen CM, Du BF, Ho CL, et al. Perceived stress, parent-adolescent/young adult communication, and family resilience among adolescents/young adults who have a parent with cancer in Taiwan: a longitudinal study. Cancer Nursing. 2018;41:100-8.
7 Ochoa C, Casellas-Grau A, Vives J, et al. Positive psychotherapy for distressed cancer survivors: Posttraumatic growth facilitation reduces posttraumatic stress. International Journal of Clinical and Health Psychology. 2017;17:28-37.

8 Horwood S, Anglim J. Problematic smartphone usage and subjective and psychological well-being. Computers in Human Behavior. 2019;97:44-50.
9 Boehm JK, Soo J, Zevon ES, et al. Longitudinal associations between psychological well-being and the consumption of fruits and vegetables. Health Psychology. 2018;37:959-67.
10 Antonovsky A. Unraveling the Mystery of Health: How People Manage Stress and Stay Well. San Francisco: Jossey-Bass; 1987.
11 Winger JG, Adams RN, Mosher CE. Relations of meaning in life and sense of coherence to distress in cancer patients: A meta□analysis. Psycho□Oncology. 2016;25:2-10.
12 Chu JJ, Khan MH, Jahn HJ, Kraemer A. Sense of coherence and associated factors among university students in China: cross-sectional evidence. BMC Public Health. 2016;16:336.
13 Suraj S, Singh A. Study of sense of coherence health promoting behavior in north Indian students. The Indian Journal of Medical Research. 2011;134:645-52.
14 Elsharkawy NB, Mohamed SM, Awad MH, Ouda MMA. Effect of Happiness Counseling on Depression, Anxiety, and Stress in Women with Recurrent Miscarriage. International Journal of Women's Health. 2021;13:287-95.
15 Rabiei L, Lotfizadeh M, Karimi Z, Masoudi R. The effects of the Fordyce's 14 fundamentals for happiness program on happiness and caregiver burden among the family caregivers of patients with epilepsy: A randomized controlled trial. Seizure. 2020;83:124-31.
16 Khayeri F, Rabiei L, Shamsalinia A, Masoudi R. Effect of Fordyce Happiness Model on depression, stress, anxiety, and fatigue in patients with multiple sclerosis. Complementary Therapies in Clinical Practice. 2016;25:130-5.
17 Hemati Z, Abbasi S, Paki S, Kiani D. The effect of happiness training based on Fordyce model on perceived stress in the mothers of children with cleft lip and palate. Journal of Caring Sciences. 2017;6:173-81.
18 Abolfathpour P, Aghakhani N, Houshmandi S, et al Impact of Happiness Educational and Performance Program of Fordyce on Depression Severity among Patients Undergoing Hemodialysis in Urmia city hospitals, Iran: A Randomized Controlled Trial. Paper presented at: 23rd Medical Students Annual National Research Congress & 9th the Medical Students International Research Congress; 2022 Sep 6-9; Ardabil, Iran. [In Persian].
19 Kushlev K, Heintzelman SJ, Lutes LD, et al. Does happiness improve health? Evidence from a randomized controlled trial. Psychological Science. 2020;31:807-21.
20 Yeom I, Oh Wo. Development and effects of salutogenesis program for adolescents with moyamoya disease: A randomized controlled trial. PLoS One. 2023;18:e0284015.
21 Cheng WLS, Tang ACY, Tsang MCM, et al. Effect of music breathing, a program based on mindful breathing and music listening therapy for promoting sense of coherence in young people: study protocol for a randomized controlled trial. Trials. 2023;24:662.
22 Munro B. Statistical methods for health care research. 4th ed. Philadelphia: Lippincott Williams & Wilkins; 2001.
23 Mahammadzadeh A, Poursharifi H, Alipour A. Validation of Sense of Coherence (SOC) 13-item scale in Iranian sample. Procedia-Social and Behavioral Sciences. 2010;5:1451-5.
24 Khanjani M, Shahidi S, Fathabadi J, et al. Factor structure and psychometric properties of the Ryff's scale of Psychological well-being, short form (18-item) among male and female students. Thoughts and Behavior in Clinical Psychology. 2014;9:27-36. [In Persian].
25 Antonovsky A. The structure and

properties of the sense of coherence scale. Social Science & Medicine. 1993;36:725-33.
26 Eriksson M, Lindström B. Validity of Antonovsky's sense of coherence scale: a systematic review. Journal of Epidemiology & Community Health. 2005;59:460-6.
27 Ryff C, Almeida D, Ayanian J, et al. Midlife in the United States (MIDUS 2), 2004-2006 (ICPSR 4652). Inter-university Consortium for Political and Social Research (ICPSR). Michigan: National Archive of Computerized Data on Aging; 2019.
28 Ryff CD, Keyes CL. The structure of psychological well-being revisited. Journal of Personality and Social Psychology. 1995;69:719-27.
29 Ryff CD, Singer BH. Best news yet on the six-factor model of well-being. Social Science Research. 2006;35:1103-19.
30 Ghazavi Z, Mardany Z, Pahlavanzadeh S. Effect of happiness educational program of Fordyce on the level of nurses' happiness. Journal of Health and Care. 2017;19:117-24. [In Persian].
31 Ghaljaei F, Hastings-Tolsma M, Rezaee N. Fordyce happiness training program on the competence of mothers of premature infants admitted to the NICU from Middle East: A quasi-experimental study. Pediatrics & Neonatology. 2023;64:512-7.
32 Barekzaei F, Navidian A, Rezaee N. The effect of Fordyce happiness training on the depression of the mothers of premature infants admitted to the neonatal intensive care unit. Iran Journal of Nursing. 2020;33:1-12. [In Persian].
33 Chiang HH, Lee TSH. Family relations, sense of coherence, happiness and perceived health in retired Taiwanese: Analysis of a conceptual model. Geriatrics & Gerontology International. 2018;18:154-60.
34 Mikaeili N, Rahimzadegan S. The effect of cognitive-behavioral Fordyce happiness training on fatigue perception and sense of coherence in diabetic patients type 2. Rooyesh-e-Ravanshenasi Journal. 2020;9:61-70. [In Persian]
35 Da-Silva-Domingues H, Del-Pino-Casado R, Palomino-Moral PÁ, et al. Relationship between sense of coherence and health-related behaviours in adolescents and young adults: a systematic review. BMC Public Health. 2022;22:477.
36 Sargolzaei MS, Shirsavar MG, Allahyari J, et al. The Effect of Happiness Training on Psychological Well-Being in Patients with Thalassaemia Major: A quasi-experimental study. Sultan Qaboos University Medical Journal. 2022;22:370-5.
37 Elham A, Golparvar M, Sajjadian I. Comparison the effectiveness of cognitive behavioral therapy focused on insomnia with mindfulness based cognitive therapy and Fordyce happiness training on affective capital in women with migraine headache. Feyz Medical Sciences Journal. 2022;26:446-56. [In Persian].
38 Schueller SM, Parks AC. Disseminating self-help: positive psychology exercises in an online trial. Journal of Medical Internet Research. 2012;14:e63.

# Original Article

# Exploring Health Providers' Perspective Regarding the Needs of Adolescent Mothers During Breastfeeding: A Qualitative Study

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## Abstract

**Background:** The prevalence of breastfeeding is less common among adolescent mothers than adult mothers. These mothers experience various issues during breastfeeding. The present study aimed to explore the normative needs of adolescent mothers during breastfeeding from health care providers' perspective.

**Methods:** This qualitative content analysis study was conducted from October 2022 until June 2023. 14 health care providers who had worked in the field of breast milk were purposefully selected with maximum variation. Face-to-face semi-structured interviews were conducted and sampling continued until data saturation. Data analysis was performed using Graneheim and Lundman's method with MAXQDA software version 10.

**Results:** The main concepts obtained from the data were classified into one theme entitled, "comprehensive support", and seven categories including "need to correct wrong traditional beliefs", "educational and counseling needs", "providing quality services", "need for psychological support", "need for protective laws", "financial needs", and "the need for social network support".

**Conclusion:** Adolescent mothers in Iran have various needs during breastfeeding, and they require the assistance of their families, healthcare providers, and the government to fulfill them. Therefore, it is also recommended that policymakers in the health system should design policies to accommodate the requirements of this group of mothers. In addition to policy development in the health system, the infrastructure required for policy and law to be executed should be considered.

**Keywords:** Adolescent mothers, Breastfeeding, Need, Qualitative study, Healthcare Providers

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## Introduction

Initiation of breastfeeding, exclusive breastfeeding, and continuous breastfeeding for up to two years are less common among adolescent mothers than adult mothers.[1, 2] As characterized by the World Health Organization (WHO) in an explanation, breastfeeding by adolescent mothers is called "feeding under exceptionally difficult circumstances".[3] WHO prescribes that babies should be solely breastfed until the age of six months. Despite the suggestions of the WHO, around 44% of babies in the world receive breast milk up to six months.[4, 5] Different nations have lower breastfeeding rates among adolescent mothers than the adult mothers.[2, 6, 7]

Depending on the age and social circumstances, the components influencing infant feeding methods vary in adolescent and adult mothers. Adolescent mothers need information of breastfeeding, often need support from families and healthcare workers, and have less capacity to oversee breastfeeding problems.[8] In addition, based on the results of various studies, most of these mothers are not in good social and economic conditions and face many physical, psychological and social challenges, including facing unknown situations, mental health problems such as depression, anxiety, lack of self-confidence, multiple responsibilities, dropping out of school, financial problems, and negative cultural reaction related to their ability to become parents, which affect their breastfeeding.[9, 10]

Breast milk is the finest nourishment for babies of adolescent mothers. Since their babies frequently confront health issues caused by premature birth and low birth weight, breastfeeding can decrease the seriousness of these babies' health issues because human milk contains antibodies and enzymes that support the development of babies.[11]

In spite of the importance of breastfeeding in adolescent mothers, it is not specified within the breastfeeding guidelines and studies of Iran; also, breastfeeding needs of this group of mothers is ignored within the Iranian health system. Therefore, in order to recognize and discover this phenomenon, we made an attempt to conduct a qualitative study which was required in this field.[12] The term "need" has been defined in a variety of ways, all aiming at enhancing the population's access to health care. Needs assessments serve as a catalyst for enhancements and modifications to healthcare offerings.[13] The concept of needs used in this study was according to Bradshaw's taxonomy of social needs. Bradshaw distinguished between four different kinds of needs: comparative, normative, felt, and expressed. For this study, one category from Bradshaw's taxonomy was used: the normative needs. Normative need is defined by experts and typically produces services meant to look after members of society.[14]

To the best of the research team's knowledge, no study was found in the field of explaining the breastfeeding needs of adolescent mothers in Iran. Therefore, the present study was carried out with the aim of exploring the normative needs of adolescent mothers during breastfeeding from healthcare providers' perspective.

## Methods

This is a qualitative content analysis conducted in two provinces of Iran, Mashhad and Urmia. Participants were health providers, which had appropriate knowledge in the field of breast milk including pediatricians, obstetricians, lactation consultants, midwives, nurses, and senior managers in the field of breast milk. They were required to have at least two years of relevant work experience and willingness to cooperate to participate in the study. Their unwillingness to take part at each stage during the interview was the exclusion criterion.

Sampling was done purposefully and with maximum variation such as various organizational positions, age, sex, work experience, and education level. The researcher attended the workplace of the

participants to do the sampling. After a brief explanation of the purpose of the study was provided and their consent to participate in the study was obtained, an appointment was made with them to conduct an interview. Before the interview, written consent was obtained from the participants who had entered the study. The interview location was selected based on the participants' convenience, such as health centers, hospitals or their work office. Based on the admission requirements, in-depth interviews were conducted with 14 stakeholders. Sampling continued from October 2022 to June 2023.

The first author performed face-to-face, semi-structured interviews that lasted approximately one hour (ranging from 48-80 minutes). Health providers were asked to express their thoughts and experiences with adolescent mothers' breastfeeding needs and respond to open-ended questions. The interview guide included the following questions: "What problems and obstacles do adolescent mothers face during breastfeeding?", "What conditions do you think affect breastfeeding of adolescent mothers?", "If we want to take measures to support the breastfeeding of adolescent mothers, what should we pay attention to?" Questions such as "Can you tell me more about that?" or "Can you give an example of this?" were used to encourage the participants to share more and probing. All interviews were recorded using a voice recorder and transcribed verbatim. Sampling continued until we obtained no additional information and had gathered sufficient data regarding the subject under study.

Data analysis and management were carried out using the MAXQDA software version 10. Data analysis was carried out simultaneously with the data collection process using Graneheim and Lundman's approach in four stages.[15] In stage 1, the interviews were read a few times to get an idea of their content and pick up an insight and the entire idea through investigating of both latent and manifest content. In stage 2, the texts of each interview transcript were separated into meaning units characterized as words, sentences, and paragraphs within the text, where the content of diverse texts were related to each other. In stage 3, the meaning units were condensed and labeled with codes. In stage 4, the codes were compared in terms of similarity and differences, and the similar codes were set within the initial categories. As the analysis advanced, the initial categories were developed and subcategories were shaped. The categories then emerged from the integration of similar subcategories.

Lincoln and Goba's criteria including credibility, dependability, confirmability, and transferability were considered.[16] For trustworthiness, prolonged engagement with data comparison increased the credibility of the study. Also, in the analytical stage, both evaluation by experts in the research team and audit by experts in qualitative research outside the research team were used, and they confirmed appropriate decisions and analytic process (dependability). Furthermore, some quotations, codes, sub-categories and categories were evaluated by the research team (confirmability). Transferability of the data was provided via a purposive sampling which made maximum diversity in demographic characteristics.

This study was approved by the Ethics Committee of Mashhad University of Medical Sciences (IR.MUMS.REC.1401.110), and the participants provided informed consent to take part in the study after a comprehensive explanation of the study objectives and methodology. Participants were assured that their involvement was entirely voluntary, they had full right to withdraw from the study at any point, and any information they provided would be treated with utmost confidentiality. Written consent was obtained from the participants before conducting the interview.

## Results

The participants' age ranged from 32 to 59 years. The majority of the participants (78.5%) were

women. Health providers' work experiences were between 7 and 33 years. Table 1 shows the participants' characteristics in this study.

From the data analysis, 16 subcategories and seven themes were extracted from the perspective of health providers regarding the normative needs of adolescent mothers in breastfeeding duration. The main theme of "comprehensive support" was created from the integration of the categories, including the "need to correct wrong traditional beliefs", "educational and counseling needs", "providing quality services", "need for psychological support", " need for protective laws", "financial needs", and "the need for social network support" (Table 2).

*1. Need to Correct Wrong Traditional Beliefs*

According to the key informant's statements, the decision of adolescent mothers to begin and maintain breastfeeding is greatly influenced by the customs and traditions they have inherited from older generations. Even with the necessary information, adolescent mothers who lack freedom and knowledge about breastfeeding and living with their parents tend to adhere to traditional notions about feeding their infants. Convictions such as adolescent mothers' and families' perceptions of colostrum as low-quality milk, failure to breastfeed due to the adolescent mother's small breasts, adolescent mothers' concern about sagging breasts after breastfeeding, giving sugar water to the infant on the first day after birth, early start of complementary feeding to gain weight and the risk of breastfeeding for the health of adolescent mothers are incorrect traditions that the family and the young mothers still adhere to. A midwife said:

"I had a mother who didn't let us breastfeed her baby after birth, she says that the baby should defecate first and then drink milk, or for example, adolescent mothers were not allowed to breastfeed, saying that their breasts are too small to produce milk."(P10)

*2. Educational and Counseling Needs*

The consensus among the key informants was that adolescent mothers were insufficiently

**Table 1:** Characteristics of the participants

| No | Age | Sex | Education | Work experience (years) | Organizational position |
|---|---|---|---|---|---|
| P1 | 59 | Male | MD[a], Pediatrician | 19 | A doctor in a private clinic |
| P2 | 43 | Female | MD, Pediatrician | 12 | A doctor in a private clinic |
| P3 | 46 | Female | MD, Obstetrician | 16 | A doctor in a private clinic |
| P4 | 40 | Female | PhD[b] | 8 | Reproductive health specialist |
| P5 | 47 | Female | General practitioner | 16 | National lactation consultant training educators |
| P6 | 32 | Female | Bachelor of Midwifery | 7 | Hospital lactation consultant |
| P7 | 56 | Female | PhD | 33 | Head of the Ministry of Health's Midwifery Department |
| P8 | 39 | Female | Bachelor of Midwifery | 11 | A midwife working in a health center |
| P9 | 36 | Male | General practitioner | 15 | Head of the Primary Health Centre |
| P10 | 49 | Female | Bachelor of Midwifery | 21 | A midwife working in a maternity hospital |
| P11 | 54 | Female | Master of Midwifery | 24 | Head of the Maternity Hospital |
| P12 | 49 | Male | MD, Obstetrician | 18 | Head of the Provincial Breastfeeding Promotion Committee |
| P13 | 38 | Female | Master of Nursing | 13 | A nurse who works in the neonatal intensive care unit |
| P14 | 45 | Female | General practitioner | 18 | The head of the Neonatal Health Unit of the Health Department |

[a]Medical doctor, [b]Doctor of Philosophy

**Table 2:** Sub-categories and categories generated from the data

| Subcategories | Categories |
|---|---|
| Negative effect of traditional beliefs of adolescent mothers on breastfeeding<br>Traditional beliefs of the previous generation as an obstacle to breastfeeding | Need to correct the wrong traditional beliefs |
| Educational needs during pregnancy and after delivery<br>The need for breastfeeding education before pregnancy | Educational and counseling needs |
| Need for equipment<br>The need for manpower<br>The need for training and a positive attitude of healthcare providers | Providing quality services |
| Psychological support to adopt and perform motherly roles<br>The need for a positive attitude and self-confidence | Need for psychological support |
| Maternity and paternity leave law after the birth<br>Laws on continuing education for adolescent mothers | The need for protective laws |
| Financial shortage<br>Limited financial aid resources | Financial needs |
| Family support<br>Peer support<br>Acceptance pregnancy and breastfeeding of adolescent mothers in society | The need for social network support |

informed and lacked the necessary abilities for breastfeeding. The healthcare system and breastfeeding guidelines often neglect the needs of these mothers, leaving them without sufficient support for breastfeeding. Therefore, for success in breastfeeding, receiving training and acquiring the necessary skills from healthcare professionals are crucial. According to the study participants, adolescent mothers should be educated about breastfeeding during pregnancy, delivery, as well as before pregnancy.

Numerous participants stated that expectant adolescent mothers saught assistance at health centers, yet these facilities fail to provide education on breastfeeding. The healthcare providers solely educate pregnant adolescents on potential danger signs of pregnancy but neglect the acquisition of knowledge on breastfeeding skills of adolescent mothers. Meanwhile, adolescent mothers need to attend more educational and counseling sessions than adult mothers, and the time of each breastfeeding counseling session in this group of mothers should be more than that of adult mothers. A participant mentioned:

*"During pregnancy, adolescent mothers do not receive any training from health centers to breastfeed. Health center workers only focus on pregnancy risk symptoms and do not provide these mothers who have no information about breastfeeding with education*" (P6).

Ensuring that adolescent mothers participate in classes to prepare for childbirth was deemed significant by some participants, and they advocated the comprehensive availability of these classes in all healthcare centers. The inclusion of specific breastfeeding instruction in these classes is also crucial. Some participants suggested that adolescent mothers should undergo specialized classes on breastfeeding before giving birth, enabling them to acquire the necessary skills. A participant told:

*"These mothers need more breastfeeding training than adult mothers because they have no breastfeeding experience, so it is better to consider special breastfeeding classes for them."* (P3)

Participants agreed that adolescent mothers must receive practical breastfeeding training after giving birth. To ensure effective learning of breastfeeding skills, the midwife must stay near the mother and provide guidance. It was also emphasized that any issues regarding breastfeeding should be addressed and monitored following discharge from the hospital.

*"Adolescent mothers should receive individualized breastfeeding instruction at the hospital. Rather than instructing them collectively in a room with seven or eight other mothers, a nurse or midwife should teach them individually. A young mother might not be as familiar with breastfeeding as an adult mother. Thus, you need to dedicate plenty of time to train them."* (P12)

Home visit was recommended as an appropriate solution to assess their breastfeeding progress and provide assistance if there are any challenges. A health provider implied:

*"After the baby is born, we can conduct a home visit to educate adolescent mothers on breastfeeding and enhance their breastfeeding skills. A home visit presents a valuable chance to identify breastfeeding issues mothers may be facing and offer them suitable solutions"* (P5).

Some participants believed that educating adolescent girls about the advantages of breastfeeding should take place in various settings such as high schools, pre-marital counseling sessions, and through media platforms like TV or the Internet.

*"While at school, we are presented with a valuable opportunity to educate adolescent girls and boys about the significance of breastfeeding"* (P4).

*3. Providing Quality Services*

This category explains the essential facilities and equipment that hospitals and health centers are required to have to effectively support breastfeeding among adolescent mothers. According to some participants, hospitals or health centers lack the necessary equipment for holding educational programs about breastfeeding or managing breast-related issues such as sunken nipples. Health centers required educational videos to demonstrate proper breastfeeding methods and breast pump machines for mothers. A lactation consultant said:

*"In a big hospital like this we don't have enough good breast pump machines. Every department needs at least one machine that helps with pumping breast milk. For instance, if a mother's nipples are sunken in, I need to contact the neonatal unit, neonatal intensive care unit, or the delivery room to get a breast pump machine*" (P6).

According to some participants, even though a significant number of premature deliveries and underweight babies are born to adolescent mothers, there is a shortage of adequate resting facilities for these mothers in the neonatal intensive care unit, so individuals who come to the hospital from different areas are required to reside in the hospital chapel. As a result, lack of adequate rest and sleep negatively impacts both the quantity and quality of the mother's breast milk. A nurse implied:

*"The mothers' resting room is located in a small section, and mothers visiting from other cities have nowhere to rest"* (P13).

The consensus among most people is that there is an inadequate number of breastfeeding counselors in the country, and the training workshops they receive are not of satisfactory quality.

Moreover, midwives and nurses in hospitals and health centers dedicate significant time to writing reports and maintaining files and less time to spend on educating breastfeeding to mothers. A participant said:

*"A midwife dedicates a significant amount of time to inputting information into the computer system and completing various forms. As a result, they have limited time to educate mothers about breastfeeding in the hospital."* (P7)

Key informants mentioned that healthcare workers and doctors are not adequately educated in providing advice on promoting breastfeeding, while the workshops they participate in to enhance breastfeeding promotion are insufficient in both quantity and quality. They do not have enough knowledge and skills to provide breast milk counseling; thus, when an adolescent mother is faced with breastfeeding challenges, some specialist doctors or healthcare providers recommend feeding the baby with powdered milk.

*"Pediatricians have limited experience in breastfeeding counseling. Most of them recommend formula to adolescent mothers who experience nipple pain or their baby has jaundice."* (P11)

*4. Need for Psychological Support*

This category expresses the psychological requirements of adolescent mothers as they nurture their babies through breastfeeding. Most of the key informants stated that adolescent mothers required psychological support from medical professionals and their families due to their young age, social status, and limited experience, to adapt to motherhood, get accustomed to breastfeeding, and conquer challenges faced during the breastfeeding process. Moreover, they believed that adolescents might not be accountable due to their youth, so emotional support is essential in ensuring that they can breastfeed and care for their babies. One of the participants stated:

*"Adolescent mothers need counseling to deal with issues like sore nipples and waking up at night to breastfeed. If a mother doesn't receive enough encouragement and psychological support, she may stop breastfeeding very soon, and this negative experience will always be on her mind."* (P12).

According to some participants, adolescent mothers facing premature births require psychological support concerning their emotional well-being due to experiencing significant stress and anxiety. Milking and feeding babies via gavage are a stressful process for them. Therefore, these mothers should receive psychological counseling and support from counselors, healthcare providers, and their families to play motherly roles. One of the nurse said:

*"An adolescent mother who has a premature baby feels overwhelmed and shocked when she meets the baby for the first time. These mothers should receive counseling to help them cope with their emotions while in the hospital."* (P13)

Many participants stated that most adolescent mothers lacked the self-assurance to breastfeed their babies and they did not believe in their physiological ability to breastfeed. To establish and continue the practice of breastfeeding, they require psychological support in enhancing their self-assurance and faith in their abilities by articulating their feelings and ideas. A midwife said:

*Most of these mothers don't have the necessary self-confidence to breastfeed. They don't believe in their own abilities at all. In my opinion, this group of mothers should receive psychological support and the people around them should encourage them.*"(P8)

*5. The Need for Protective Laws*

The category of this discussion revolves around the establishment of guidelines to assist adolescent mothers with breastfeeding their babies by the government. According to some key informants, fathers are allegedly denied the opportunity to take leave following the birth of their child by private companies or government entities. They acknowledged that young fathers should be granted longer duration leave from work following the birth of their baby to assist their spouses and offer more assistance to their wives. Also, if adolescent mothers work in private companies, they should be given maternity leave for nine months. A participant said:

*"In my opinion, adolescent mothers' husbands should be able to take more time off work after their child is born. They should have nine months of leave to support their wives emotionally and help them with household chores."* (P10)

Some mentioned that adolescent mothers dropped out of school due to their pregnancy and the need to care for their infants through breastfeeding. They suggested implementing regulations to prevent mothers from leaving school, offering a dedicated nursery school for their children, and providing the necessary facilities for milking and storing milk in school.

*6. Financial Needs*

This category discusses the financial requirements of adolescent mothers and need to access to the financial resources. According to the study participants, many adolescent mothers have a disadvantaged social and economic position with limited financial resources. Moreover, the adolescent mother is incapable of earning money due to her lack of the necessary skills, and their husbands are also young. For the same reason, they were denied the chance to access higher education or gain the necessary expertise to generate income, resulting in a lack of desirable employment prospects and financial stability. Therefore, these families have limited access to nutritious food during pregnancy and breastfeeding, powdered milk, and supplementary meals for children.

Despite the existing program requiring the distribution of food baskets to mothers, some participants stated that it was not implemented within the nation. Politicians must ensure meticulous planning to implement this program successfully within the country. The government and charitable organizations should provide financial assistance to support these mothers. A pediatrician said:

*"The program says that food baskets can be given to mothers, but this doesn't happen in the country. Many cases of intrauterine growth restriction are seen in adolescent mothers. Like other countries, the government should provide the pregnant women and mothers with food baskets for the first six months after their baby is born. This can help encourage mothers to breastfeed their babies."* (P1)

*7. The Need for Social Network Support*

The category describes that adolescent mothers require support from their social network including husband, family members, peers, and other members of society. Because of their lack of experience with breastfeeding and childcare, the majority of the participants stated that adolescent mothers required support from their husbands and families. Furthermore, peer support was essential in breastfeeding adolescent mothers, particularly in mothers with special conditions such as premature babies.

According to the participants, adolescent mothers in society are subject to criticism depending on their capability to breastfeed their infants. Additionally, they are sometimes held accountable for their early pregnancies, and there is no positive attitude towards pregnancy and breastfeeding of adolescent mothers in the society. As a result, society must accept this group of mothers and permit breastfeeding in public settings. One of the participants stated:

*"When a pregnant adolescent mother wants to appear in public or breastfeed her baby, she receives negative reactions from those around her, causing her to either avoid society or not bring her baby to public places."* (P14)

## Discussion

This qualitative study attempts to investigate the normative needs of breastfeeding in adolescent mothers from the perspectives of the healthcare providers. One of the needs was correcting the wrong beliefs and traditions of the previous generation, which affect the initiation of breastfeeding and exclusive feeding of these mothers. According to Hannon et al. and Ingram et al., conventional behaviors play a significant role in the failure of exclusive breastfeeding among adolescent mothers. Behaviors that contradict the most recent research and recommended breastfeeding practices can result in breastfeeding failure in adolescent mothers.[17, 18] Studies in India and Kenya also show that people believe that giving colostrum to a baby should be avoided or give water to a baby in the first week of birth to prevent jaundice,[19, 20] which is consistent with the results of the current study.

In the present study, participants highlighted the need for education and counseling, which healthcare professionals should address as one of the needs of adolescent mothers for breastfeeding. Numerous sources have

highlighted the significance of education for adolescent mothers. According to Jamiea et al. and Pentecost et al., adolescent mothers require information and breastfeeding training from nurses. Adolescent mothers should be permitted to breastfeed while under the supervision of nurses, and nurses should respond to their inquiries.[21, 22] Due to their age and lack of college education, adolescent mothers may not have had sufficient time to acquire knowledge about breastfeeding. Additionally, these mothers have no prior experience with breastfeeding; thus, they lack the essential skills required for successful breastfeeding. Breastfeeding education is not offered to adolescent mothers in Iran before childbirth, such as during pregnancy or in the classroom, while prenatal care visit is a significant opportunity for adolescent mothers to obtain breastfeeding information.[23]

The provision of high-quality services, including proper equipment, enough staff, training, and supportive attitudes of healthcare toward breastfeeding were the other needs of adolescent mothers. One of the crucial factors in the success of breastfeeding among these mothers is raising awareness and encouraging attitudes of healthcare professionals toward breast milk.[24] In a study, one of the factors that hindered breastfeeding for adolescent mothers was revealed to be the insufficient knowledge among doctors regarding breast milk.[25]

Psychological assistance from their families and healthcare professionals was a need to successfully adjust to their responsibilities as mothers and enhance their self-assurance and self-esteem to breastfeed successfully. Some studies showed that adolescent mothers lacked confidence in their abilities and required support, and increased self-confidence and motivation to initiate breastfeeding.[24, 26]

From the perspective of healthcare providers, establishing laws that provide protection and educational opportunities is crucial for the benefit of adolescent mothers. The adolescent mothers required school support to successfully resume their education and preserve their breast milk while attending school. This achievement needs unified rules for returning to school after the birth of a child.[27, 28]

Financial support was an important need for breastfeeding among adolescent mothers which was also mentioned in other studies.[29, 30] It can be argued that the insufficient academic credentials of adolescent mothers for specific job positions, resulting from their dearth of education, and the lack of financial support from their impoverished parents are the primary factors contributing of their impoverishment and their financial requirements. Therefore, the philanthropic and non-governmental organization support, establishment of protective programs such as the government's donation of food baskets and support for insurance for breastfeeding services, as well as the training of earning skills in farming and handicrafts, can be an alternative to improve the economic status of these mothers.

One of the needs of adolescent mothers during breastfeeding is the need for social network support from husbands, family members, peers, and other community members. A study revealed that adolescent mothers required psychological and informational support from their family and spouse to face the challenging practical problems associated with breastfeeding.[31] Adolescent mothers have more positive and productive interactions with their peers. They might find peer support and information exchange more acceptable.[22] Some studies have indicated that breastfeeding requires the support of the spouse or sexual partner and that this support is an essential factor in enabling adolescent mothers to continue breastfeeding. The support and involvement of the desired partners in breastfeeding activities can impact a mother's ability, confidence, and self-esteem.[32, 33] One could argue that adolescent mothers' dependence on others develops due to their ignorance of child development, care, and breastfeeding and the challenges and psychological and physical changes associated with puberty.[34, 35]

Findings showed that adolescent mothers faced criticism and were subject to blame while going through pregnancy and breastfeeding. This indicates that society should approach them respectfully and without condemnation, acknowledging and including them as adolescent mothers. Furthermore, adolescent mothers who breastfeed in public are subject to judgment when they are out in the community.[26] A systematic review study found that breastfeeding issues related to being judged and feeling ashamed are constant obstacles to breastfeeding for adolescent mothers, resulting in low self-confidence when feeding in public.[36]

The current study focused on breastfeeding of adolescent mothers in Iran, and the findings can be highly valuable in recognizing the needs of the mothers and revealing them to health system policymakers. In addition, the researchers attempted to achieve the necessary diversity in participants so that they can supply rich and diverse data, which is one of the strengths of the current research. One of the limitations of the current research is that adolescent mothers and their families were not interviewed.

## Conclusion

According to the findings of the current study, adolescent mothers in Iran have various needs during breastfeeding, and they require the assistance of their families, healthcare providers, and the government to fulfill them. Therefore, it is also recommended that policymakers in the health system should design policies to accommodate the requirements of this group of mothers. In addition to policy development in the health system, the infrastructure required for policy and law execution should be considered.

**Conflict of Interest:** None declared.

## References

1 Conde RG, Guimarães CMdS, Gomes-Sponholz FA, et al. Breastfeeding self-efficacy and length of exclusive breastfeeding among adolescent mothers. Acta Paulista de Enfermagem. 2017;30:383-9.
2 Sahin ME, Sahin E, Madendag Y, et al. Evaluation of exclusive breastfeeding rates and breastfeeding duration in term uncomplicated Turkish adolescent mothers. Annals of Medical Research. 2020;27:2346-51.
3 World Health Organization. Infant and young child feeding. Geneva: World Health Organization; 2023.
4 World Health Organization. Global strategy for infant and young child feeding. Geneva: World Health Organization; 2003.
5 La Leche League International. World Health Day improve global breastfeeding practices. US: La Leche League International; 2021.
6 Agho KE, Ahmed T, Fleming C, et al. Breastfeeding practices among adolescent mothers and associated factors in Bangladesh (2004–2014). Nutrients. 2021;13:557.
7 Ngamnil N, Kaewkiattikun K. Prevalence of exclusive breastfeeding among adolescent mothers in Bangkok. Thai Journal of Obstetrics and Gynaecology. 2019;27:79-87.
8 Tshering D, Gurung MS, Wangmo N, et al. Prevalence of exclusive breastfeeding and factors associated with exclusive breastfeeding of children in Trongsa District, Bhutan. Asia Pacific Journal of Public Health. 2018;30:369-77.
9 Nuampa S, Tilokskulchai F, Sinsuksai N, et al. Breastfeeding experiences among Thai adolescent mothers: A descriptive qualitative study. Pacific Rim International Journal of Nursing Research. 2018;22:288-303.
10 Aparicio E, Pecukonis EV, O'Neale S. "The love that I was missing": Exploring the lived experience of motherhood among teen mothers in foster care. Children and Youth Services Review. 2015;51:44-54.

11 Lyons KE, Ryan CA, Dempsey EM, et al. Breast milk, a source of beneficial microbes and associated benefits for infant health. Nutrients. 2020;12:1039.
12 Polit DF, Beck CT. Essentials of nursing research: Appraising evidence for nursing practice. 7th ed. Philadelphia: Lippincott Williams & Wilkins; 2010.
13 Asadi-Lari M, Packham C, Gray D. Need for redefining needs. Health and Quality of Life Outcomes. 2003;1:34.
14 Bradshaw J. Taxonomy of social need. In: McLachlan G, editor. Problems and progress in medical care : essays on current research, 7th series. London: Oxford University Press; 1972.
15 Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. Nurse Education Today. 2004;24:105-12.
16 Polit DF, Beck CT. Essentials of nursing research methods, appraisal and utilization. 6th ed. Philadelphia: Lippincott Williams & Wilkins; 2006.
17 Ingram J, Cann K, Peacock J, et al. Exploring the barriers to exclusive breastfeeding in black and minority ethnic groups and young mothers in the UK. Maternal and Child Nutrition. 2008;4:171-80.
18 Hannon PR, Willis SK, Bishop-Townsend V, et al. African-American and Latina adolescent mothers' infant feeding decisions and breastfeeding practices: a qualitative study. Journal of Adolescent Health. 2000;26:399-407.
19 Subbiah N, Jeganathan A. Socio-cultural beliefs influencing breastfeeding practices among primi postnatal mothers residing in urban slum area of Delhi. Health and Population; Perspectives and Issues. 2012;35:61-73.
20 Wanjohi M, Griffiths P, Wekesah F, et al. Sociocultural factors influencing breastfeeding practices in two slums in Nairobi, Kenya. International Breastfeeding Journal. 2017;12:5.
21 Pentecost R, Grassley JS. Adolescents' needs for nurses' support when initiating breastfeeding. Journal of Human Lactation. 2014;30:224-8.
22 Jamie K, O'Neill R, Bows H, Hackshaw-McGeagh L. Healthcare practitioner relationships, cultural health capital and breastfeeding support for adolescent mothers. Health Education Journal. 2020;79:901-13.
23 Wambach KA, Cohen SM. Breastfeeding experiences of urban adolescent mothers. Journal of Pediatric Nursing. 2009;24:244-54.
24 Spear HJ. Nurses' attitudes, knowledge, and beliefs related to the promotion of breastfeeding among women who bear children during adolescence. Journal of Pediatric Nursing. 2004;19:176-83.
25 Smith PH, Coley SL, Labbok MH, et al. Early breastfeeding experiences of adolescent mothers: a qualitative prospective study. International Breastfeeding Journal. 2012;7:13.
26 Dykes F, Moran VH, Burt S, Edwards J. Adolescent mothers and breastfeeding: experiences and support needs-an exploratory study. Journal of Human Lactation. 2003;19:391-401.
27 Bhana D, Morrell R, Shefer T, Ngabaza S. South African teachers' responses to teenage pregnancy and teenage mothers in schools. Culture, Health & Sexuality. 2010;12:871-83.
28 Jama NA, Wilford A, Haskins L, et al. Autonomy and infant feeding decision-making among teenage mothers in a rural and urban setting in KwaZulu-Natal, South Africa. BMC Pregnancy and Childbirth. 2018;18:52.
29 Mollborn S, Jacobs J. "We'll figure a way": Teenage mothers' experiences in shifting social and economic contexts. Qualitative Sociology. 2011;35:23-46.
30 Nabugoomu J, Seruwagi GK, Corbett K, et al. Needs and barriers of teen mothers in rural eastern Uganda: stakeholders' perceptions regarding maternal/child

nutrition and health. International Journal of Environmental Research and Public Health. 2018;15:2776.
31 Palupi RA, Devy SR. Role of social support in breastfeeding for adolescent mothers. KnE Life Sciences. 2018;4:223-31.
32 Werdani KE, Wijayanti AC, Sari LE, Puspasari AY. The role of husband in supporting exclusive breastfeeding among teenage mothers in Boyolali, Indonesia. Enfermeria Clinica. 2021;31:S239-42.
33 Mannion CA, Hobbs AJ, McDonald SW, Tough SC. Maternal perceptions of partner support during breastfeeding. International Breastfeeding Journal. 2013;8:4.
34 Yılmaz E, Yılmaz Z, Isık H, et al. Factors associated with breastfeeding initiation and exclusive breastfeeding rates in Turkish adolescent mothers. Breastfeeding Medicine. 2016;11:315-20.
35 Acheampong AK, Ganga-Limando M, Aziato L. Perceived enablers of exclusive breastfeeding by teenage mothers in Ghana. South African Family Practice. 2020;62:e1-5.
36 MacGregor E, Hughes M. Breastfeeding experiences of mothers from disadvantaged groups: a review. Community Practitioner. 2010;83:30-3.

# Original Article

# Comparative Investigation of Genital Self-image and Sexual Function in Women with and Without a History of Female Genital Cosmetic Procedures: A Cross-sectional Study

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## Abstract

**Background:** Despite the increasing growth of female genital cosmetic procedures, the long-term effects of these procedures are not clearly understood. This study was conducted to compare the genital self-image and sexual function in women with and without female genital cosmetic procedures.

**Methods:** This cross-sectional study was conducted on 315 participants (210 women without a history of genital cosmetic surgery and 105 women with it) in Alborz province, Iran, from early February 2023 to mid-May 2023. The sampling was done conveniently. Data collection instruments were Female Genital Self Image Scale and Female Sexual Function Index. Statistical analysis was done in SPSS 16 software using t-test, chi-square, and logistic regression, and $P<0.05$ was considered statistically significant.

**Results:** The use of laser to tighten the vagina with 77.77% and Perineoplasty with 29.2% were the main cosmetic procedures. The mean duration passed from the surgical procedures was 4.79±3.60 years, while it was 1.13±0.74 years for non-surgical procedures. Women with a history of genital procedures had a higher mean age (39.45±10.38, $P=0.023$). However, they were lower regarding the level of education ($P<0.001$), family income ($P<0.001$), and exercise ($P<0.001$). Also, they showed a higher number of pregnancies ($P<0.001$), deliveries ($P<0.001$), vaginal delivery ($P<0.001$), episiotomy ($P<0.001$), and neonates with a weight of ≥3.5 kg ($P=0.002$). In both groups, midwives and doctors were the most important sources of information about the appearance and function of reproductive system. However, the genital self-image and sexual function of the two groups did not differ significantly ($P>0.05$).

**Conclusion:** No difference in sexual self-image and lack of difference in sexual function after cosmetic procedures show the need to pay attention to recommending and selecting these procedures. Public awareness about the diverse and natural forms of the female genitalia, education about the variety of the factors affecting sexual function, reduction of unnecessary interventions, increase in physiological births, retraining doctors and midwives, and multidimensional counseling can help to choose more appropriate candidates for cosmetic procedures.

**Keywords:** Cosmetic surgery, Plastic surgery, Body image, Sexual dysfunction

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## Introduction

Female genital cosmetic procedures constitute a wide range of procedures done for altering the appearance of female genitalia as well as strengthening and reconstructing the tissue of this region without medical reasons.[1] Indeed, the aim of this procedure was not the treatment of medical disorders or structural or functional abnormalities such as uterine prolapse, urinary incontinence, and sexual dysfunction. Rather, it only focused on the appearance of the female genitalia and enhancement of sexual function.[2] It has been established as a way to boost self-confidence and self-esteem as well as sexual pleasure for women.[1] Female genital cosmetic procedures involve different methods such as labiaplasty, vaginoplasty, perineorrhaphy, reduction of the clitoris hood size (hoodoplasty), enlarging and shrinking the labia major, fat injection into the labia major, strengthening G spot, vaginal rejuvenation, etc.[3] Today, the applicants for such measures are increasing, and annually tens of thousands of women undergo surgery to have the physical appearance of their genitalia changed.[4] According to the report of the American Cosmetic Surgeons' Association in 2018, the female genital cosmetic procedures with 53% growth have been among the fastest-growing procedures over five years.[5] Also, according to the statistics published by the Australian Government, between 2001 and 2013, only vaginoplasty has grown by 140% in this country.[6] Iran is also known as one of the countries with a high rank in cosmetic procedures in the world.[7] However, there are no precise statistics available regarding the rate of such surgeries since many cases of vaginoplasty, labiaplasty, and perineoplasty are done in private clinics and offices by surgeons and non-surgeons.

Concerns over genital appearance and the tendency to regain body image are among the major motivations behind undergoing female genital procedures for women.[8] Genital self-image refers to the throughs and emotions as well as beliefs of the person about her own genitalia, including the appearance and function of the genitalia and its health.[9-11] Low genital self-image is associated with low levels of sexual satisfaction in the person as well as perceived sexual dissatisfaction with the sexual partner in the sexual relationships.[12-14] It can cause sexual dysfunction and lower self-esteem in sexual relationships.[15] Meanwhile, sexual function is an effective factor on the psychological status of people;[16] diminished sexual function for any reason would have numerous negative effects on the personal and social life of the person.[17] Further, higher sexual function leads to increased intimacy between the couples and their enhanced satisfaction with each other, thereby boosting their psychological health.[18] Although many factors are involved in the female sexual function such as psychological and psychiatric disorders, musculoskeletal, endocrine, cardiovascular problems, infection diseases, or consumption of selective serotonin reuptake inhibitors (SSRIs) and many others,[19] some individuals think that lack of sense of sexual satisfaction and intimate relationship between them and their spouse results from their physical weaknesses. Accordingly, many women seek female cosmetic procedures.[20] Indeed, in 2015, the Australian Royal College released a guideline entitled "Female genital cosmetic surgery", a resource for general practitioners and other health professionals in response to the severe increase in the demand for this kind of surgery and the need for the existence of guidelines in this regard for healthcare providers. This is because healthcare providers play a central role in training women about the normal differences of the external genitalia. Furthermore, the complications of these procedures should be noted to women, and they should be asked about all causes leading to sexual dysfunction before deciding on undergoing such procedures for improving sexual function.[6, 21]

Based on the investigations performed so far, female genital cosmetic procedures are performed both in hospitals and extensively in private clinics and offices by individuals with varying degrees of expertise in Iran; very few

studies have dealt with this issue involving women with different times elapsed from female genital cosmetic procedures and the variety of the surgeon skills. A study in Iran compared the sexual function of 160 women with a history of cosmetic surgery with normal women, but the genital self-image of the women was not studied.[20] Due to lack of information, the present study was performed to compare the genital self-image and sexual function of women with and without a history of female genital procedures referring to female cosmetic and healthcare services.

## Materials and Methods

This is a cross-sectional study. The statistical population of this research consisted of women who referred to female cosmetic and healthcare services (office of midwives; office of gynecologists; skin, hair, and cosmetic clinics, as well as women's hair salons) in Alborz province and the data collection lasted 3.5 months from early February 2023 to mid-May 2023. To determine the minimum sample size required at a confidence interval of 95% and test power of 80% and to compare the sexual function in women with and without genital cosmetic procedures with the accuracy of 1.5 and standard deviations obtained from the paper by Eftekhar et al. after setting the values in the following formula, the sample size was obtained 105 subjects.[22] Since the ratio of women without cosmetic procedures was almost twice as high as that of women with such procedures, 105 women with cosmetic procedures and 210 women without cosmetic procedures were included in the study.

$$n = \frac{(z_{1-\alpha/2} + z_{1-\beta})^2 \times (s_1^2 + s_2^2)}{d^2}$$

$z_{0.975} = 1.96$

$z_{0.8} = 0.84$

d=1.5

$s_1 = 4.2 \;\; s_2 = 3.5$

$$n = \frac{(1.96 + 0.84)^2 \times (4.2^2 + 3.5^2)}{1.5^2} \approx 105$$

The inclusion criteria were literacy and ability to complete the questionnaire, Iranian nationality, sexually active women (women with a history of permanent marriage, temporary marriage, etc.) for whom three months and more of one or several cases of surgical procedure or nonsurgical methods of cosmetics or rejuvenation of the genital area and vagina had been passed, sexually active women (women with a history of permanent marriage, temporary marriage, etc.) with no history of undergoing surgical or nonsurgical cosmetic or rejuvenation surgery for the female genitalia, lack of the history of other surgeries in the genital area, and pelvic cancer or pelvic radiotherapy. The exclusion criteria included incomplete questionnaires (more than 10% of items) and withdrawal from participation in the study after completing the questionnaire. Convenience sampling and purposeful method were used, and the response to questionnaires was in the form of self-report. The sampling was done from both groups of women with and without a history of genital cosmetic procedures concurrently. As to confidentiality, the questionnaires were placed inside envelopes, where the number on the envelope matched the number on the questionnaire. Additionally, the written consent forms signed by the study participants were in these envelopes. Also, a brief description was written on the envelopes about the type of study as well as inclusion criteria, the ethics code of this study, as well as the researcher's phone number to respond to the possible questions. These questionnaires were placed, with prior coordination with the owners of the cosmetic and healthcare providers centers of Alborz province and their notification about the type of study and its goals as well as gaining their consent. Sampling was possible with the help of the owners of these centers and with their efforts in informing the clients about this study. That is, they asked the clients to answer the questionnaires if they met the inclusion criteria. These centers included 35 midwifery offices, two gynecologist offices,

12 hair, skin and cosmetic clinics, five laser service-providing centers, five women's sports clubs, and 53 women's hairdressers and epilation centers. Furthermore, during the sampling stage of this study, to find the subjects with a history of genital cosmetic procedures, we also used snowball sampling method. In fact, the midwives who helped the study researchers in taking samples from the clients of their offices, when identifying each person with a history of genital cosmetic surgery, asked her to introduce people with a similar history, if she knew, to the study researchers. In case any person with a history of genital procedures was identified, through referral to their commute place, attempts were made to provide the questionnaire to them as well. In addition, during the sampling, incomplete questionnaires were excluded from the study. To investigate the adequacy of the number of subjects taken, the researcher frequently presented to the mentioned centers, whereby the completed questionnaires were collected and investigated, so that finally the predetermined sample size of this study would be achieved. Furthermore, to appreciate the participants of the study, the phone number of the researcher was provided to the participants, so that in case they needed sexual and midwifery consultation in the scope of expertise of the researcher, they could send SMS to this number for their request and coordination for telephone counseling. 28 phone contacts were made for giving consultation to the participants of the study. The research instrument was a demographic and baseline questionnaire prepared by the researchers, and its validity was determined based on content validity. This way, at first, this questionnaire was prepared using reliable and new sources and articles and based on the required information according to special characteristics of Iranian women's life; then, it was given to 10 faculty members (reproductive health specialists and midwives); after that, amendments were made according to the opinion of these professors. The questionnaire included individual characteristics (age, weight, marital status, history of malignancy in the genital area, pelvic surgery and radiotherapy, education, personal income, family income, employment, doing Sports); fertility characteristics (gravida, history of abortions and stillbirths, number of births, type of deliveries, history of episiotomy, giving birth to a neonate ≥3/5 Kg); questions about the history of performing cosmetic procedures in other parts of the body (i.e., rhinoplasty); questions related to the factors affecting the choice of genital cosmetic procedures; questions about sources of information about the genital appearance and sexual function; and questions about the type of genital cosmetic procedure performed and the time it was performed.

Female Genital Self-Image Scale (FGSIS) was developed by Hernebik et al. (2010). It contains seven items scored using a four-point Likert scale ranging from absolutely disagree (1), disagree (2), agree (3), and absolutely agree (4), with the minimum and maximum scores of 7 and 28, respectively. This questionnaire has no cutoff point, and higher scores represent positive perceptions and feelings about the genitalia. The FGSIS development study found a one-dimensional structure with adequate internal consistency ($\alpha$=0.91); test-retest reliability was not performed in the original FGSIS study.[23] The Persian version of this questionnaire was developed by Pakpour et al. in 2014, and its reliability and validity were confirmed using Cronbach alpha of 0.7 and more. Good to excellent internal consistency reliability, test-retest reliability, and convergent and construct validity were found in this study.[24]

Female sexual function index (FSFI) was developed by Rosen et al. in 2000;[25] it consists of 19 items in six areas: sexual desire or libido, arousal, lubrication, orgasm, satisfaction, and pain. The Persian version of this questionnaire was developed by Heydari et al. in 2008, the reliability and validity of which have been confirmed with Cronbach alpha of 0.7 and more. The scores considered for the items of the sexual desire or libido are1-5, those

for arousal, vaginal lubrication, orgasm, and pain are 0-5, and those for satisfaction were 0 or 1-5. Zero score suggests that the person has had no sexual activity over the past four weeks. The scores of each domain are obtained by summing up the items of that domain and multiplying that by the factor number. The factor numbers for the desire; vaginal arousal and lubrication; and orgasm, satisfaction, and pain are 0.6, 0.3, and 0.4, respectively. By summing up the scores of the six domains, the total score of the scale will be obtained. Indeed, regarding the scoring, higher scores represent better sexual function. The minimum score for the desire is 1.2, that for arousal, vaginal lubrication, orgasm, and pain is 0, that for satisfaction is 0.8, and that for the total scale is 2. Since the domains are of the same weight, the maximum score for each domain is 6 and for the total scale is 36. The cutoff point for the desire is 3.3; that for arousal, vaginal lubrication, and orgasm 3.4, for satisfaction and pain 3.8, and the total scale is 28. In other words, scores lower than the cutoff point show sexual dysfunction, while higher scores represent normal sexual function.[26]

The present study was approved by the ethics committee of the faculty of nursing and midwifery as well as the rehabilitation faculty of Tehran University of Medical Sciences (code: IR.TUMS.FNM.REC.1401.161) and other permissions from Alborz University of Medical Sciences. All necessary approvals for performing the research were obtained from the relevant administrators. Written informed consent forms which were put with questionnaires in the envelopes were also signed by all the participants. The right of voluntary participation and withdrawal from the study was preserved. All participants were assured of data confidentiality.

Data analysis was performed using SPSS 16, with $P<0.05$ as the statistically significant level. Mean and standard deviation were used for the quantitative variables including age, weight, and the time elapsed from the female genital cosmetic procedure. Frequency was employed for the qualitative variables including other items of the questionnaire. Assuming the normality of the data, for the analysis, Chi-square, Fisher exact test, and logistic regression tests were employed.

## Results

Overall, 580 questionnaires were distributed in this study, and 315 questionnaires were completed. 48 questionnaires were excluded due to incomplete information and 217 questionnaires were not answered. Out of 315 women participating in the study, 105 (33.33%) had a history of such procedures while 210 (66.67%) did not have this history. Of 105 women with a history of genital cosmetic procedures, 96 had a history of genital cosmetic surgery, while 9 women reported non-surgical genital cosmetic procedures. Perineoplasty with (N=28) 29.2% was the major surgical procedure, while the use of laser for tightening the vagina with (N=9) 77.77% was the major non-surgical procedure. The mean and standard deviation of the time elapsed from the surgical and non-surgical procedures were 4.79±3.60 years and 1.13±0.74 years, respectively. The minimum and maximum time elapsed from the surgical procedure and non-surgical procedure were 4 months to 15 years, and 4 months to 3 years, respectively (Table 1).

As reported in Table 2, the personal characteristics of the participants with and without cosmetic procedure groups were compared with each other. The mean age in the group of women with a history of procedures was 39.45±10.38 years, while it was 37.4±7.85 in women without this history ($P=0.023$). There was a statistically significant difference in the level of education of the two groups and women in the group of having a history of genital procedures were lower ($P<0.001$). Also, lower levels regarding to family income ($P<0.001$), and exercise ($P<0.001$) were seen in the group of women with a history of genital cosmetic procedure.

Table 3 shows the fertility characteristics

**Table 1:** The type of procedure in women with a history of genital cosmetic procedure group and the time elapsed since it

| Variable | N (%) |
|---|---|
| Surgical procedure | |
| Perineoplasty | 28 (29.2) |
| Labiaplasty | 19 (19.7) |
| Multiple pelvic surgeries at the same time (Cystocele+Perineoplasty) | 17 (17.7) |
| Anterior and posterior Colporrhaphy+Perineorrhaphy | 16 (16.6) |
| Vaginoplasty | 15 (15.6) |
| Shrinking the labia major+Vaginoplasty | 1 (1.04) |
| Non-surgical procedure | |
| Laser for tightening the vagina | 7 (77.77) |
| Injection of gel to the labia major | 1 (11.11) |
| Multiple non-surgical procedures at the same time | 1 (11.11) |
| Time elapsed from procedure | Mean±SD |
| Surgical procedure | 4.79±3.60 |
| Non-surgical procedure | 1.13±0.74 |

**Table 2:** Individual characteristics in the two groups of women with and without a history of female genital cosmetic procedures

| Variable | Non-genital cosmetic procedure group | Genital cosmetic procedure group | P value |
|---|---|---|---|
| Age (year), Mean±SD | 37.04±7.85 | 39.45±10.38 | 0.023* |
| Weight (kg), Mean±SD | 67.59±10.10 | 67.52±9.3 | 0.985* |
| Marital status, N (%) | | | 0.903** |
| Permanent marriage | 185 (88.1) | 92 (87.6) | |
| Temporary marriage | 25 (11.9) | 13 (12.4) | |
| Education, N (%) | | | <0.001** |
| Elementary | 16 (7.6) | 23 (21.9) | |
| High school and diploma | 102 (48.6) | 59 (56.2) | |
| University | 92 (43.8) | 23 (21.9) | |
| Family income, N (%) | | | <0.001** |
| Low | 13 (6.2) | 20 (19.0) | |
| Medium | 106 (50.5) | 60 (57.1) | |
| Good | 74 (35.2) | 20 (19.0) | |
| Very well | 17 (8.1) | 5(4.8) | |
| Employment, N(%) | | | 0.05** |
| Employed | 75 (35.7) | 26 (24.8) | |
| Housewife | 135 (64.3) | 79 (75.2) | |
| Exercise, N(%) | | | <0.001** |
| Yes, regular | 42 (20.0) | 13 (12.3) | |
| Yes, sometime | 74 (35.2) | 25 (23.8) | |
| Yes, little | 36(17.1) | 19 (18.1) | |
| No, I used to exercise | 36 (17.1) | 16 (15.2) | |
| No, never | 22 (10.4) | 32 (30.5) | |

*T test, ** Chi-square

of the two study groups. Indeed, (N=50) 47.7% of women with a history of genital cosmetic procedures against (N=53) 25.3% of the women without the history had more than three pregnancies in the past (P<0.001). Based on the study results, in the group of women with a history of procedure (N=68) 64.8% and in the other group (N=57) 27.1% had a history of vaginal delivery (P<0.001). In the group of women with a history of procedure, (N=46) 43.8% and in the group of women without the history only (N=55) 26.2% had a history of giving birth to a neonate above 3.5 kg (P=0.002).

**Table 3:** Frequency distribution of fertility characteristics in the two groups of women with and without a history of female genital cosmetic procedures

| Variable | Non-genital cosmetic procedure group N (%) | Genital cosmetic procedure group N (%) | P value |
|---|---|---|---|
| Gravida | | | <0.001* |
| 0 | 39 (18.6) | 5 (4.8) | |
| 1 | 44 (21.0) | 23 (21.9) | |
| 2 | 74 (35.2) | 27 (25.7) | |
| 3 | 30 (14.3) | 28 (26.7) | |
| ≥4 | 23 (11.0) | 22 (22.0) | |
| Abortions and Stillbirths | | | 0.720* |
| 0 | 148 (70.5) | 68 (64.8) | |
| 1 | 37 (17.6) | 22 (21.0) | |
| 2 | 21 (10.0) | 12 (11.4) | |
| ≥3 | 4 (1.9) | 3 (2.9) | |
| Number of births | | | <0.001* |
| 0 | 50 (23.8) | 5 (4.8) | |
| 1 | 53 (25.2) | 29 (27.6) | |
| 2 | 89 (42.2) | 40 (38.1) | |
| 3 | 14 (6.7) | 21 (20.0) | |
| ≥4 | 4 (1.9) | 10 (9.5) | |
| Type of delivery | | | <0.001* |
| C/S[a] | 90 (42.9) | 22 (21) | |
| NVD[b] | 57 (27.1) | 68 (64.8) | |
| Both | 13 (6.2) | 10 (9.5) | |
| None | 50 (23.8) | 5 (4.8) | |
| Episiotomy | | | <0.001* |
| Yes | 57 (27.1) | 71 (67.6) | |
| No | 153 (72.9) | 34 (32.4) | |
| Newborn Weight ≥3.5 kg | | | 0.002* |
| Yes | 55 (26.2) | 46 (43.8) | |
| No | 155 (73.8) | 59 (56.2) | |

*Chi-square; [a]Caesarean section; [b]Normal vaginal delivery

The mean score of the genital self-image score in the group of women with female genital procedures was 20.69±2.89, while it was 20.58±3.34 in the other group. According to the independent t-test results, the mean score of genital self-image did not differ significantly between the two study groups (P=0.764). Table 4 shows the result of the logistic regression model comparing the genital self-image in two groups of women with and without a history of female genital cosmetic procedures by adjusting for confounding variables.

Findings showed that the mean score of sexual function was 23.74±8.92 and 24.7±7.77 in the groups of women with and without a history of cosmetic procedures, showing no significant difference regarding sexual function (P=0.455). Based on the FSFI questionnaire scoring, (N=64) 61% of the participants in the study who had a history of undergoing female genital cosmetic procedures had sexual dysfunction, while in the group of women without this history (N=127) 60.5% had sexual dysfunction. Furthermore, regarding lubrication and pain, (N=26) 24.8% and (N=42) 40% of women with the history had dysfunction, respectively. However, in the other group (n=39) 18.6% and (N=72) 34.3% had dysfunction (Table 5). Moreover, the results of logistic regression after modifying the confounding variables in the two groups did not show any statistically significant differences in the sexual function of the two groups of women (P>0.05).

**Table 4:** The results of the logistic regression model comparing genital self-image in the two groups of women with and without a history of female genital cosmetic procedures by adjusting for confounding variables

| Variable | EXP(B) | Confidence interval | P value |
|---|---|---|---|
| Education | | | |
| Elementary | 1.178 | (0.376-3.692) | 0.778 |
| High school | 0.860 | (0.406-1.128) | 0.693 |
| University | Ref | | |
| Family income | | | |
| Low | 2.164 | (0.447-10.487) | 0.338 |
| Medium | 1.215 | (0.333-4.432) | 0.768 |
| Good | 0.996 | (0.250-3.963) | 0.996 |
| Very well | Ref | | |
| Exercise | | | |
| Yes, regular | 0.371 | (0.126-1.090) | 0.071 |
| Yes, sometime | 0.269 | (0.108-0.671) | 0.005 |
| Yes, little | 0.580 | (0.211-1.590) | 0.289 |
| No, I used to exercise | 0.346 | (0.120-0.999) | 0.050 |
| No, never | Ref | | |
| Gravida | | | |
| 0 | 2.619 | (0.165-41.473) | 0.495 |
| 1 | 1.494 | (0.319-7.001) | 0.610 |
| 2 | 0.556 | (0184-1.685) | 0.300 |
| 3 | 0.961 | (0.293-3.152) | 0.948 |
| ≥4 | Ref | | |
| Number of births | | | |
| 0 | 0.317 | (0.003-29.809) | 0.620 |
| 1 | 0.615 | (0.070-5.396) | 0.661 |
| 2 | 0.633 | (0.106-3.775) | 0.616 |
| 3 | 1.095 | (0.172-6.967) | 0.923 |
| ≥4 | Ref | | |
| Type of delivery | | | |
| CS[a] | 2.053 | (0.034-124.536) | 0.731 |
| NVD[b] | 4.762 | (0.072-314.609) | 0.465 |
| History of both | 3.870 | (0.050-298.796) | 0.542 |
| None | Ref | | |
| Episiotomy | | | |
| Yes | 0.457 | (0.164-1.270) | 0.133 |
| No | Ref | | |
| Newborn Weight≥3.5 kg | | | |
| Yes | 0.514 | (0.260-1.017) | 0.056 |
| No | Ref | | |
| History of Procedure in relatives | | | |
| Yes | 0.727 | (0.345-1.533) | 0.402 |
| No | Ref | | |
| Suggestion from partner | | | |
| Yes | 0.375 | (0.130-1.081) | 0.069 |
| No | Ref | | |
| Surfing on Internet | | | |
| Up to an hour per day | 0.917 | (0.420-2.001) | 0.827 |
| Two hours per day | 0.614 | (0.274-1.376) | 0.236 |
| More than three hours per day | Ref | | |
| Online Shopping | | | |
| Yes | 0.851 | (0.420-1.722) | 0.653 |
| No | Ref | | |

| | | | |
|---|---|---|---|
| Using the Internet to obtain medical information | | | |
| Yes | 0.599 | (0.278-1.293) | 0.191 |
| No | Ref | | |
| The most important source of information about the function of the reproductive system | | | |
| Doctor and Midwife | 4.222 | (1.074-16.601) | 0.039 |
| Social media and Websites | 3.354 | (0.717-15.683) | 0.124 |
| People around and the person herself | 3.277 | (0.493-21.781) | 0.219 |
| Doctor and media | Ref | | |
| The most important source of information about the appearance of the genitals | | | |
| Doctor and Midwife | 0.723 | (0.159-3.282) | 0.674 |
| Social media and Websites | 1.092 | (0.210-5.678) | 0.917 |
| People around and the person herself | 5.873 | (0.614-56.221) | 0.125 |
| Doctor and media | Ref | | |
| Age | 0.985 | (0.946-1.026) | 0.461 |

[a]Caesarean section; [b]Normal vaginal delivery

**Table 5:** Comparison of sexual function and its dimensions in the two groups of women with and without a history of female genital cosmetic procedures

| Sexual function | Non-genital cosmetic procedure group N(%) | Genital cosmetic procedure group N(%) | P value |
|---|---|---|---|
| Sexual desire | | | 0.931* |
| Has a disorder | 65 (31.0) | 33 (31.4) | |
| Has not a disorder | 145 (69.0) | 72 (68.6) | |
| Arousal | | | 0.932* |
| Has a disorder | 69 (32.9) | 34 (32.4) | |
| Has not a disorder | 141 (67.1) | 71 (67.6) | |
| Lubrication | | | 0.231* |
| Has a disorder | 39 (18.6) | 26 (24.8) | |
| Has not a disorder | 171 (81.4) | 79 (75.2) | |
| Orgasm | | | 0.926* |
| Has a disorder | 51 (24.3) | 26 (24.8) | |
| Has not a disorder | 159 (75.7) | 79 (75.2) | |
| Satisfaction | | | 0.999* |
| Has a disorder | 56 (26.7) | 28 (26.7) | |
| Has not a disorder | 154 (73.3) | 77 (73.3) | |
| Pain | | | 0.32* |
| Has a disorder | 72 (34.3) | 42 (40.0) | |
| Has not a disorder | 138 (65.7) | 63 (60.0) | |
| Sexual function | | | 0.935* |
| Has a disorder | 127 (60.5) | 64 (61.0) | |
| Has not a disorder | 83 (39.5) | 41 (39.0) | |

*Chi-square

Table 6 shows the frequency distribution of the sources used to obtain information about the function of the female reproductive system and its appearance in the participants of this study. Although the two groups had statistically significant differences in the sources used to get informed about the function of the reproductive system (P=0.003) and sources of information about the genital appearance (P=0.006), both groups of women with a history of genital cosmetic surgery and without it mentioned doctors and midwives as the most important sources of information.

## Discussion

In this study, the participants were divided into two groups: those with a history of undergoing

**Table 6:** Frequency of the sources of information about the function of the female reproductive system and its appearance in the two groups of women with and without a history of female genital cosmetic procedures

| Variable | With history of cosmetic procedure N (%) | Without history of cosmetic procedure N (%) | P value |
|---|---|---|---|
| Sources of information about the function of the reproductive system | | | 0.003* |
| Doctor and midwife | 72 (68.6) | 124 (59.0) | |
| Social media and websites | 18 (17.1) | 30 (14.3) | |
| People around and personal information | 9 (8.6) | 10 (4.8) | |
| Doctor and media | 6 (5.7) | 46 (21.9) | |
| Sources of information about the appearance of the genital | | | 0.006* |
| Doctor and midwife | 71 (66.7) | 142 (67.6) | |
| Social media and websites | 21 (20.0) | 37 (17.6) | |
| People around and personal information | 9 (8.6) | 4 (1.9) | |
| Doctor and media | 5 (4.8) | 27 (12.9) | |

*Chi-square

any genital cosmetic procedure (surgical or nonsurgical) and women without a history of female genital cosmetic procedures. The results of the comparison of the two groups showed no difference regarding genital self-image and sexual function between women with a history of female genital cosmetic procedures and those without this history.

Enhancement of genital self-image is one of the reasons behind undergoing genital cosmetic procedures in women. Indeed, many factors such as body image, organ loss, genital hygiene practice, sexual function, vaginal infections, culture, developmental stages, obesity, and media affect the women's genital self-image. Especially with the development of technology, the effect of media on women's genital self-image is increasing, and exposure to images of genitalia on the Internet has affected women's interest in genital cosmetic surgery.[27] However, some studies have suggested that women with low sexual satisfaction may benefit from therapeutic procedures to enhance their genital self-image.[9] Also, Goodman et al. argue that there is some kind of dissatisfaction with the body with genital centrality; surgery may respond to that.[28]

However, according to the theory of the dynamic and flexibility of women's genital self-image and its change during life and even its improvement, it is very important to know that strengthening women's negative perception of their genitals will motivate them to undergo unnecessary genital cosmetic surgery.[29]

As we see in the result of the comparison of women's genital self-image in the two study groups of this study, there was no higher score in the group with a history of the procedure. Therefore, it should be noted that ignoring other influencing factors on women's genital self-image and insisting on the effect of surgery on increasing genital self-image is not always true. Possibly, if the person knows that her sexual genitalia are within a wide range of the normal genitalia of women, she may no longer intend to undergo surgery. Thus, counseling the candidates before undertaking genital cosmetic procedures seems to be essential.

Meanwhile, today there is a high demand for undergoing female cosmetic surgical or non-surgical procedures to improve the sexual function of women. In the study by Goodman et al., more than 90% of women without any actual complaint of genitalia disorder underwent the surgery.[30] Some studies showed improvement in female sexual function after female genital cosmetic surgery, but in these studies, mostly the sexual function investigation, instruments have not been valid enough, and the follow-up duration of the subject has also been limited.[31] In the

present study, the sexual function did not differ significantly in women with and without a history of female genital cosmetic procedures. Even the score obtained in lubrication and pain was lower in the group of women with a history of genital procedures compared to the other group. This result is in line with the findings of another study in which women undergoing labiaplasty were compared with another group of women without this operation history regarding sexual function for six months. Despite the improvement of the sexual function scored three months after the operation, in the six-month investigation, no difference was observed.[32] Furthermore, the study by Goodman et al. showed progress in the extent of sexual satisfaction three months following genital cosmetic surgery, while the six-month investigation did not suggest progress in sexual satisfaction.[28]

However, based on the results of several studies, a dramatic improvement in sexual function can be seen after genital cosmetic surgeries in women who suffer from disorders such as pelvic organ prolapse and vaginal laxity.[22, 28] It is important to consider that such results cannot be generalized to all healthy women, including those without any pelvic complications. In other words, it is not correct to advise all women to perform female genital cosmetic procedures to improve their sexual function. As seen in the present study, the level of sexual function of women with and without a history of female genital cosmetic procedures was not statistically different. Therefore, it can be concluded that women who have suffered from disorders such as vaginal laxity have benefited from female genital cosmetic procedures, and after these procedures, they reach a level of sexual function that is higher or similar to that of the general population of women in the society. However, calling the diverse appearance of female genitalia pathological and promoting surgery as a powerful solution to improve sexual function have ethical challenges that require serious attention.[33, 34]

The results of comparing the demographic characteristics also indicated that women in the group with a history of genital procedures had a higher mean age. This result can be caused by the increased desire of people to slow down the aging process. However, regarding the level of education, family income, and exercise, those with a history of this surgery were lower than the women without this history. It means they were women who had primary and high school education and were in an average economic status with less experience of exercising. These findings are in the same line with those of Eftekhar et al.; they found that older women with higher education as well as average economic status sought genital procedures more.[35] It seems that these results are because in Iran women with a higher level of education and those with a better economic status are less inclined to have children, and the rate of vaginal childbirth and episiotomy in them is lower than Cesarean section; therefore, they suffer less perineal damage during the delivery. However, the low frequency of having a history of exercising in women with a history of genital cosmetic procedures can be justified by the hypothesis that people who exercise have higher muscle strength and self-confidence. Also, it is in line with the results of several other studies.[22, 36, 37]

In the present study, women with a higher number of pregnancies, deliveries, vaginal delivery, history of episiotomy, and delivery of a neonate above 3.5 kg had a greater history of female genital cosmetic procedures. Some studies have shown an increase in damage to the pelvic floor muscles after vaginal delivery, especially delivery of a baby weighing more than 3.5 kg or delivery with instruments compared to Cesarean section.[38] This issue may affect the women's sexual life, and sometimes mild depression is seen in these women, which reduces their quality of life and sexual satisfaction and causes them to resort to female genital cosmetic procedures.[38] This suggests the importance of paying more attention to performing physiological delivery and taking care of the perineum before, during, and postdelivery to prevent serious injuries to

the pelvic muscles, especially in the perineum during childbirth. Other studies such as that of Griffiths and Berrett have also had such a recommendation.[38,39] Furthermore, the present study results showed that the most important source of acquisition of information about the appearance and function of the genitalia in the group of women with a history of female genital procedures included gynecologists and midwives. This result indicates the importance of the existence of a suitable educational program for midwives and gynecologists to increase their knowledge about the wide range of normal appearance of the female genitalia, the effect of genital cosmetic procedures on the women's sexual function, familiarity with the complications of these procedures, and increase in the competence for providing proper and effective counseling, which can be one of the best solutions for raising proper awareness among women about the female genital cosmetic procedures.

One of the strengths of the present study was the examination of the genital self-image and sexual function of women with a history of female genital cosmetic procedures without considering the time limit after surgery and the limitations related to performing surgery by certain professional surgeons; also, we were able to compare these characteristics with women without such a history. However, the most important limitation of this study was the lack of information about their genital self-image score and female sexual function before surgery and the extent of its change after surgery. Therefore, it is suggested that other similar studies should be conducted in order not to have such limitations.

## Conclusion

The results of this study showed no difference in sexual self-image and lack of difference in sexual function after cosmetic procedures. These results indicate all influential factors on women's genital self-image and their sexual function should be considered important at the time of consultation with women who are inclined to undergo genital cosmetic procedures. Therefore, counseling by a sexual health specialist is recommended before cosmetic surgery to inform women about the diversity in natural genital shapes. Additionally, adjustment of expectations and evaluation of all physical, psychological, and marital factors affecting sexual function are recommended. Doctors and midwives have been the main information sources for women about their genital self-image and sexual function, so it is necessary for them to accept the differences in female genital appearance as a normal variation and to give proper information to women. In addition, the inconclusive results of cosmetic procedures on genital self-image and sexual functions and their ethical challenges should be included in the retraining programs of doctors and midwives.

## Acknowledgment

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## References

1 Braun V. Female genital cosmetic surgery: a critical review of current knowledge and contemporary debates. Journal of Women's Health. 2010;19:1393-407.
2 Nezhad FT, Jalali R, Karimi F, Menati L. Exploration of Women's Experiences of Sexual Function after Female Genital Cosmetic Surgery: A Phenomenological Descriptive Study. Current Women`s Health Reviews. 2023;19:77-82.
3 American Academy of Obstetrics and

Gynecology. Elective Female Genital Cosmetic Surgery: ACOG Committee Opinion Summary, Number 795. Obstetrics and Gynecology. 2020;135:249-50.
4 Holliday R, Jones M, Bell D. Beautyscapes: Mapping cosmetic surgery tourism. UK: Manchester University Press; 2019.
5 Chappell AG, Sasson DC, Soriano AJ, et al. Influence of self-perceived vulvar appearance on female sexual function. Aesthetic Surgery Journal. 2021;41:794-802.
6 Simonis M, Manocha R, Ong JJ. Female genital cosmetic surgery: a cross-sectional survey exploring knowledge, attitude and practice of general practitioners. BMJ Open. 2016;6:e013010.
7 Pourmohseni Koluri F, Shirmohammadi S. The Comparison of Self-concept, maladaptive schema and emotional processing in people with and without cosmetic surgery. Rooyesh-e-Ravanshenasi Journal. 2016;5:165-86. [In Persian]
8 Garcia B, Scheib S, Hallner B, et al. Cosmetic gynecology-a systematic review and call for standardized outcome measures. International Urogynecology Journal. 2020;31:1979-95.
9 van den Brink F, Vollmann M, Smeets MA, et al. Relationships between body image, sexual satisfaction, and relationship quality in romantic couples. Journal of Family Psychology. 2018;32:466-74.
10 Mullinax M, Herbenick D, Schick V, et al. In their own words: A qualitative content analysis of women's and men's preferences for womens' genitals. Sex Education. 2015;15:421-36.
11 Fahs B. Genital panics: Constructing the vagina in women's qualitative narratives about pubic hair, menstrual sex, and vaginal self-image. Body Image. 2014;11:210-8.
12 Fischer N, Træen B. A seemingly paradoxical relationship between masturbation frequency and sexual satisfaction. Archives of Sexual Behavior. 2022;51:3151-67.
13 van den Brink F, Vollmann M, Sternheim LC, et al. Negative body attitudes and sexual dissatisfaction in men: The mediating role of body self-consciousness during physical intimacy. Archives of Sexual Behavior. 2018;47:693-701.
14 Goldberg SY, O'Kane KM, Fitzpatrick ET, et al. Associations between Genital Self-Image and Individuals' Own and Perceived Partner Sexual Satisfaction. Journal of Sex & Marital Therapy. 2023. [Online]
15 Sharp G, Tiggemann M, Mattiske J. Factors that influence the decision to undergo labiaplasty: media, relationships, and psychological well-being. Aesthetic Surgery Journal. 2016;36:469-78.
16 Stephenson KR, Meston CM. The conditional importance of sex: exploring the association between sexual well-being and life satisfaction. Journal of Sex & Marital Therapy. 2015;41:25-38.
17 Clark SMG, Huang Q, Sima AP, Siff LN. Effect of surgery for stress incontinence on female sexual function. Obstetrics and Gynecology. 2020;135:352-60.
18 Kling JM, Kapoor E, Mara K, Faubion SS. Associations of sleep and female sexual function: good sleep quality matters. Menopause. 2021;28:619-25.
19 Robertson D, Burnstock G, Paton JFR, et al. Primer on the Autonomic Nervous System. 3rd ed. Netherlands: Elsevier; 2023.
20 Nasiri Z, Ansari Nejad N, Sadeghi J. Comparison of sexual function components in people with cosmetic surgery and normal people. Journal of Psychology New Ideas. 2022;11:1-9. [In Persian]
21 Moran C, Lee C. What's normal? Influencing women's perceptions of normal genitalia: an experiment involving exposure to modified and nonmodified images. British Journal of Obstetrics and Gynaecology. 2014;121:761-6.
22 Eftekhar T, Hajibabaei M, Veisi F, et

al. Body image, sexual function, and sexual satisfaction among couples before and after gynecologic cosmetic surgery. Journal of Family & Reproductive Health. 2021;15:252-7.
23 Herbenick D, Reece M. Development and validation of the female genital self-image scale. The Journal of Sexual Medicine. 2010;7:1822-30.
24 Pakpour AH, Zeidi IM, Ziaeiha M, Burri A. Cross-cultural adaptation of the Female Genital Self-Image Scale (FGSIS) in Iranian female college students. Journal of Sex Research. 2014;51:646-53.
25 Rosen R, Brown C, Heiman J, et al. The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. Journal of Sex & Marital Therapy. 2000;26:191-208.
26 Mohammadi KH, Heydari M, Faghihzadeh S. The female sexual function index (FSFI): validation of the Iranian version. Payesh. 2008;7:269-78. [In Persian]
27 Yüksekol ÖD, Yilmaz AN, İrtegün S. A Literature review on genital self image in women and affecting factors. International Journal of Health Services Research and Policy. 2020;5:344-55.
28 Goodman MP, Placik OJ, Matlock DL, et al. Evaluation of body image and sexual satisfaction in women undergoing female genital plastic/cosmetic surgery. Aesthetic Surgery Journal. 2016;36:1048-57.
29 Fudge MC, Byers ES. "I have a nice gross vagina": Understanding young women's genital self-perceptions. Journal of Sex Research. 2017;54:351-61.
30 Goodman MP, Placik OJ, Benson RH, et al. A large multicenter outcome study of female genital plastic surgery. The Journal of Sexual Medicine. 2010;7:1565-77.
31 Sharp G, Maynard P, Hamori CA, et al. Measuring quality of life in female genital cosmetic procedure patients: a systematic review of patient-reported outcome measures. Aesthetic Surgery Journal. 2020;40:311-8.
32 Turini T, Roxo ACW, Serra-Guimarães F, et al. The impact of labiaplasty on sexuality. Plastic and reconstructive surgery. 2018;141:87-92.
33 Chibnall K, McDonald K, Kirkman M. Pathologising diversity: medical websites offering female genital cosmetic surgery in Australia. Culture, Health & Sexuality. 2020;22:64-80.
34 Yeğin GF, Kılıç G, Seçen Eİ, et al. Clinical and ethical perspectives of medical professionals towards female genital cosmetic procedures. Turkish Journal of Obstetrics and Gynecology. 2021;18:131-8.
35 Eftekhar T, Hajibabaei M, Deldar Pesikhani M, et al. Sexual quality of life, female sexual function, female genital self-and body image among women requesting genital cosmetic surgery: a comparative study. Psychology & Sexuality. 2019;10:94-100.
36 Moore RD, Miklos JR, Chinthakanan O. Evaluation of sexual function outcomes in women undergoing vaginal rejuvenation/ vaginoplasty procedures for symptoms of vaginal laxity/decreased vaginal sensation utilizing validated sexual function questionnaire (PISQ-12). Surgical Technology International. 2014;24:253-60.
37 Abedi P, Jamali S, Tadayon M, et al. Effectiveness of selective vaginal tightening on sexual function among reproductive aged women in I ran with vaginal laxity: A quasi□experimental study. The Journal of Obstetrics and Gynaecology Research. 2014;40:526-31.
38 Griffiths A, Watermeyer S, Sidhu K, et al. Female genital tract morbidity and sexual function following vaginal delivery or lower segment caesarean section. Journal of Obstetrics and Gynaecology. 2006;26:645-9.
39 Barrett G, Pendry E, Peacock J, et al. Women's sexual health after childbirth. British Journal of Obstetrics and Gynaecology. 2000;107:186-95.

# Letter to Editor

# Emergency Psychiatric Care in Primary Healthcare in Indonesia

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## Dear Editor

The integration of emergency psychiatric care into basic healthcare services must be given top priority due to the continued prevalence of mental health disorders as a major public health concern. Improving the effectiveness and accessibility of mental health interventions is crucial, especially in primary care settings. Mental illnesses continue to rank among the top ten global causes of burden; they cause 16% of Disability-Adjusted Life Years (DALYs) worldwide, and their economic costs are projected to be around USD 5 trillion.[1] The National health survey by the Indonesian government presented in 2018 in Indonesia revealed that the cases of Severe Mental Disorders (SMD) were 7 per 1000 population or a total of 1.6 million individuals.[2] Among the individuals with SMD, 15.1% have not sought treatment, and 48.9% of those who are taking medication do not adhere to their medication regimen. The high number of SMD cases is not matched by easy access to healthcare services.[2] This is evident from the high treatment gap in mental health issues, which exceeds 90%, indicating that fewer than 10% of mental disorder cases receive standard management. Primary healthcare providers play a key role in the early detection and crisis management of mental health issues, but the lack of resources and specialized training poses a significant challenge.[3]

There is an urgent need to establish protocols and training programs that enable primary healthcare practitioners to identify and address mental health crises effectively. This involves the development of standardized assessment tools, enhancing collaboration with mental health specialists, and ensuring access to crisis intervention resources. By incorporating emergency psychiatric care into the primary healthcare setting,[4] we can reduce the stigma associated with mental health issues and facilitate a more holistic approach to healthcare.

Furthermore, addressing emergency psychiatric care in the primary healthcare setting can contribute to early intervention, preventing the escalation of mental health crises, and reducing the burden on emergency departments.[5, 6] This shift towards a more comprehensive and integrated approach is in the same line with the overarching goal of achieving equality between mental and physical healthcare.

In conclusion, addressing the integration of emergency psychiatric care into basic healthcare services is necessary to tackle the growing burden of mental health disorders in Indonesia. To effectively address this issue, policymakers, healthcare organizations, and professionals should

prioritize several key recommendations. Firstly, Indonesian policymakers need to prioritize mental health in national healthcare agendas by allocating adequate resources and developing policies that promote the integration of emergency psychiatric care into primary healthcare services. This proactive approach will ensure that mental health receives encompass the attention and resources it deserves within the healthcare system. Secondly, there is a crucial need to invest in training programs for primary healthcare practitioners. These programs should focus on enhancing their capacity to identify, assess, and manage mental health crises effectively. Specialized training in mental health assessment and crisis intervention techniques will better equip healthcare providers to respond to the needs of individuals experiencing mental health emergencies. Moreover, collaboration between primary healthcare providers and mental health specialists should be strengthened. This collaboration will ensure timely access to specialized care and resources for individuals in crisis. Adequate funding should be allocated to support the integration of emergency psychiatric care services into existing healthcare systems. By implementing these recommendations, Indonesia can take significant strides toward improving access to emergency psychiatric care and addressing the mental health needs of its population.

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## References

1 Arias D, Saxena S, Verguet S. Quantifying the global burden of mental disorders and their economic value. EClinicalMedicine. 2022;54:101675.
2 Susanti H, Brooks H, Keliat B, et al. Stakeholder perspectives of family interventions for schizophrenia in Indonesia: a qualitative study. BMC Psychiatry 2024;24:59.
3 Palmer R. Barriers to Mental Health Treatment in Patients Referred by Primary Care. [thesis]. US: University of Missouri, St. Louis; 2019.
4 de Oliveira JL, Dal Sasso Mendes K, de Almeida LY, et al. Mental Health Care in Primary Health Care: An Integrative Review. Issues in Mental Health Nursing. 2023;44:329-37.
5 Poghosyan L, Norful AA, Ghaffari A, et al. Mental health delivery in primary care: The perspectives of primary care providers. Archives of Psychiatric Nursing. 2019;33:63-7.
6 Williams AA. The Next Step in Integrated Care: Universal Primary Mental Health Providers. Journal of Clinical Psychology in Medical Settings. 2020:27:115-26.

# Letter to Editor

# Psychological Capital: A Primary Prerequisite for Health Promotion of Family Caregivers of Older Adults

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## Dear Editor

Given the growing trend of population aging worldwide and the rising prevalence of chronic diseases in this age group, the need to care for older adults is increasing, which puts a heavy burden on family caregivers.[1] Providing care to a family member with a chronic disease or debilitating condition can have numerous negative consequences such as neglecting one's spouse and children, tension among family members, decreased enjoyment of life, fatigue, anxiety, despair, incompatibility between couples, reduced social interactions, impairment in fulfilling job duties and personal goals, sleep disturbance at night, feelings of guilt, and financial problems.[2] Overall, it can be stated that the care of elderly individuals with chronic diseases places the family caregivers in a situation where they endure mental, physical, financial, and social burdens and experience a lower quality of life.[1] Additionally, providing care for elderly individuals with chronic diseases can be a source of stress for family caregivers. They often experience high levels of stress for various reasons, including the challenges of balancing work, family responsibilities, raising children, and attending to the needs of older people.[2] The mental health of family caregivers of older people has today emerged as a significant health concern. Consequently, interventions and solutions that prioritize enhancing the caregivers' health are emphasized, aiming to reduce the adverse effects and consequences associated with elderly care.[1, 2]

It appears that interventions which aim at promoting psychological capital may have an impact on mitigating the consequences and adverse effects of care. Indeed, research has shown that psychological capital is important in dealing with stressful situations, problems, and stress management.[3]

Psychological capital is recognized as a positive psychological capacity. The term was initially introduced by Luthans et al. in 2007. It encompasses four key components: hope (a positive view of the future and the ability to create pathways to achieve goals), optimism (maintaining positive expectations in various situations), efficacy (feeling of trust, sufficiency, and effectiveness in actions), and resilience (positive adaptation in response to adverse situations). These four components work together synergistically.[3]

Evidence shows that the components of psychological capital empower individuals to be less impacted by stressful situations and experience reduced tension when encountering everyday problems. Therefore, it can be stated that these individuals exhibit higher levels of psychological

health and exhibit better performance in their responsibilities. Furthermore, higher levels of psychological capital are associated with decreased job burnout.[4] On the other hand, studies have indicated that the components of psychological capital can have a positive impact on well-being and quality of life. As such, enhancing these components in individuals can effectively promote personal growth.[5] Also, it seems that psychological capital in the elderly can lead to the improvement of their mental health status.[6] On the other hand, as mentioned, the family caregivers of the elderly bear the burden of care and negative consequences, and these interventions have positive effects on them.[1]

Therefore, as mentioned, the task of caring for the elderly individuals with chronic diseases places family caregivers in a challenging and stressful situation, altering all aspects of their lives. Therefore, it appears that focusing on psychological capital and striving to enhance it for family caregivers by designing suitable interventions can impact the outcomes of the elderly care, ultimately resulting in improved physical and mental health of caregivers and enhanced quality of care they provide. Accordingly, it is recommended that health providers should consider psychological capital of family caregivers of older adults. By designing interventions that target the promotion of psychological capital, providers of such services can assist family caregivers of older people to have better mental health and adapt more easily to their caregiving role.

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## References

1 Bom J, Bakx P, Schut F, van Doorslaer E. The Impact of Informal Caregiving for Older Adults on the Health of Various Types of Caregivers: A Systematic Review. The Gerontologist. 2019;59:e629-42.
2 Malmir S, Navipour H, Negarandeh R. Exploring challenges among Iranian family caregivers of seniors with multiple chronic conditions: a qualitative research study. BMC Geriatrics. 2022;22:270.
3 Luthans F, Avolio BJ, Avey JB, Norman SM. Positive psychological capital: Measurement and relationship with performance and satisfaction. Personnel Psychology. 2007;60:541-72.
4 An M, Shin ES, Choi MY, et al. Positive Psychological Capital Mediates the Association between Burnout and Nursing Performance Outcomes among Hospital Nurses. International Journal of Environmental Research and Public Health. 2020;17:5988.
5 Chiracu A, Cosma GA, Stepan AR, et al. Psychological capital, quality of life, and well-being in mother caregivers of individuals with down syndrome. Frontiers in Psychology. 2023;14:1145104.
6 Xin Y, Li D. Introducing a new concept: Psychological capital of older people and its positive effect on mental health. Frontiers in Psychology. 2023;14:1083077.

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## Original Articles



## Letters to Editor



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