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Effectiveness of an existential group counseling program in reducing procreation anxiety among mothers of children with disabilities

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ABSTRACT

Although extensive research has been conducted to examine several forms of anxiety experienced by families of children with disabilities, procreation anxiety remains overlooked. Therefore, this study focuses on this form of anxiety and explores the effectiveness of a group counseling program in reducing the level of procreation anxiety among mothers of children with disabilities (MCD). A quasi-experimental design was employed to achieve the study's aim. The study recruited 40 mothers who were randomly assigned into two groups: an intervention group (n=20) and a control group (n=20). A multi-dimensional instrument was developed to measure procreation anxiety among the participants before the commencement and after delivering the program. Statistical measures such as means, standard deviation, and ANCOVA were used to examine the effect of the group counseling program in reducing procreation anxiety. Results revealed a high level of procreation anxiety, and a reduction was observed in the experimental group as a result of receiving the intervention. The results confirm the positive influence of the counseling program in diminishing emotional distress generally and procreation anxiety specifically. The current research, as well as existing literature, has demonstrated the effectiveness of these programs in helping families deal with their anxiety; therefore, it is highly important to involve families of children with disabilities, particularly mothers, in such programs.

Contribution/Originality: This study is one of the few investigations into procreation anxiety among MCD which is often overlooked in existing literature. The participants experienced a high level of procreation anxiety, which was reduced through the counseling program. The results emphasize the importance of involving families of children with disabilities, particularly mothers, in such programs to help them manage their anxiety.

1. INTRODUCTION

Undoubtedly, diagnosing a child with a disability in any family imposes changes in its life pattern. This change probably affects all family members, especially the parents. Extensive empirical research has confirmed that parents of children with disabilities, particularly mothers, experience several difficulties, such as financial burden, unstable partnership, anxiety, stress, and fear (Bourke-Taylor, Joyce, Grzegorczyn, & Tirlea, 2022; Smith & Blamires, 2022; Turnage & Conner, 2022).

The sources of these encountered problems are varied, for example, the extensive special demands, securing daily caregiving tasks, dealing with multi-service providers and healthcare issues, and thinking of the child's future (MacInnes, 2008; Mbatha & Mokwena, 2023; Ravindran & Myers, 2012; Steed & Langlais, 2025).

2. LITERATURE REVIEW

Thinking about the future seems to be a more challenging issue for MCD (Bujnowska, Rodríguez, García, Areces, & Marsh, 2019) and may trigger negative feelings within their families. One of the future decisions that may concern the MCD is fertility; this concern influences their desire to have new babies (MacInnes, 2008; Sheidanik, Savabi-Esfahani, & Shahverdi-Asadabadi, 2022). Literature examining the likelihood of having an additional baby among families of children with disabilities is rare and mostly confirms a reduced probability. For example, in a survey study, Şimşek, Taşçı, and Karabulut (2015) found that around two-thirds of their participants were not willing to have another child after the birth of their children with chronic illness. Similarly, parents of children with cerebral palsy reported that they no longer consider expanding their families' members (Müller, Gerdtham, Alriksson-Schmidt, & Jarl, 2022). In a recent study, conducted by Sheidanik, Savabi-Esfahani, Ghamarani, and Erfani (2025), found that over 80% of parents of children with mild intellectual disabilities had low fertility desire. Two further indicators may refer to avoiding having additional children in families with children with disabilities. These include having a small family size (Hyassat, 2013; Lundeby & Tøssebro, 2008) and the child with a disability being the youngest sibling in the family (Michelsen, Flachs, Madsen, & Uldall, 2015).

In contrast, some evidence in the literature reveals that the notion of having additional children has not been influenced by the existence of a child with a disability in the family. Burke, Urbano, and Hodapp (2011) found that parents of children with Down syndrome and parents of children with spina bifida were more inclined to have additional children. This result was confirmed by Wehby and Hockenberry (2017), who concluded that a child's health did not affect subsequent maternal fertility among families of children with severe health conditions.

2.1. Procreation Anxiety

In the American Psychological Association dictionary (VandenBos, 2015) the term anxiety is defined as "emotion characterized by apprehension and somatic symptoms of tension in which an individual anticipates impending danger, catastrophe, or misfortune… Anxiety is considered a future-oriented, long-acting response broadly focused on a diffuse threat" (p.66). Based on this conception and for the purposes of this study, procreation anxiety can be defined as a psychological feeling that includes worries, fears, and hesitation from attempting to have additional children among MCD, and this feeling results from producing a child with a disability.

Research concerns about anxiety in families of children with disabilities are extensive and report a high level among the parents. However, dealing with procreation anxiety among MCD is very rare in the available literature. It could be assumed that procreation anxiety is part of future anxiety that families of children with disabilities may experience. Related research has shown that families of children with disabilities undergo a higher level of future anxiety compared to families of typically developing children (Bujnowska et al., 2019; Özyazicioglu & Buran, 2014; Scherer, Verhey, & Kuper, 2019). Further, in an Arabic unpublished dissertation, Banat (2018) examined the influence of procreation anxiety on the quality of life for families of children with disabilities. He administered two instruments to measure procreation anxiety and quality of life to 285 families. His statistical analysis revealed that the level of procreation anxiety was high, there was a negative relationship between quality of life and procreation anxiety, and the mothers experienced a higher level of procreation anxiety than the fathers.

2.2. Counseling for Decreasing Procreation Anxiety

Since the results of the reviewed literature confirm that MCD confront a higher level of anxiety, this highlights their need for support and counseling services. In this context, some researchers in an experimental design considered the effectiveness of a parent-to-parent program on reducing anxiety (Lim et al., 2025; Onovbiona, Quetsch, & Lemus, 2025; Sharma, Govindan, & Kommu, 2022) others proved the positive role of training programs in alleviating anxiety among families (Asadi-Samani, Ghalenoee, Mousavizadeh, & Nasiri, 2025; Barlow, Powell, & Gilchrist, 2006; Lancaster et al., 2023; Sohmaran & Shorey, 2019). Further studies employed online materials to help parents of

children with disabilities deal with their daily stress and anxiety, and eventually improve their children's development (Gleeson et al., 2017; Migliorini, Lam, & Harvey, 2022; Thongseiratch, Leijten, & Melendez-Torres, 2020; Wu et al., 2024).

In terms of the counseling program for reducing procreation anxiety specifically, no empirical research was found. However, procreation anxiety could be included within the future anxiety that families might experience. In doing so, in an experimental intervention study, Sebaie, Aziz, and Atia (2024) examined the effect of cognitive practices in reducing future anxiety among parents of children with intellectual disabilities. The post-measures showed a significant decrease in future anxiety among their participants. Khedr (2019) examined the effectiveness of a behavioral therapy program in relieving future anxiety experienced by mothers of children with autism spectrum disorders; her experimental group reported a low level of future anxiety after completing the program. Similarly, future anxiety among mothers of children with mild intellectual disabilities was mitigated after attending several sessions of a counseling program (Tareq, Alblashoni, & Abdelkhalek, 2017).

By and large, the reviewed literature shows that parents of children with disabilities are often reluctant to have additional children following the birth of a child with a disability. This has led them to alter their plans regarding future fertility. Meanwhile, the investigation of procreation anxiety among parents of children with disabilities (MCD) has been overlooked. No published studies in English in this specific area of research were found; therefore, the current study seeks to fill this gap by providing empirical data on procreation anxiety among MCD. In particular, the current study aims to evaluate the effectiveness of a group counseling program in reducing procreation anxiety among MCD. The results of this study may assist policymakers in establishing programs that support parents or caregivers raising a child with a disability to cope with their procreation anxiety.

3. RESEARCH QUESTIONS

This research sets out to answer the following questions:

1. To what extent do MCD suffer from procreation anxiety?
2. Does the group counseling program reduce procreation anxiety among MCD?
3. Does the group counseling program effectively sustain low procreation anxiety levels among MCD?

4. RESEARCH METHODOLOGY

4.1. Research Design

The study utilizes a quasi-experimental design in which the effectiveness of the group counseling program was evaluated (Bryman, 2012). A group of mothers received counseling sessions and acted as the experimental group; the other group of mothers did not experience the training sessions and was considered the control group. This design was called by Creswell and Creswell (2018) as "nonequivalent (pretest and posttest) control-group design," where all mothers were selected randomly and took a pre-test and post-test. In other words, this design can be referred to as a quasi-experimental design with a non-randomized control group.

4.2. Participants

The participants were mothers who had children with disabilities enrolled in educational and rehabilitation institutions in Amman. After obtaining research ethics approval, the mothers were contacted by the administration offices of these institutions. They were asked to participate in this research. The research materials, including the informed consent form and participant information sheet, were sent to the mothers of the candidates. This process resulted in 40 mothers expressing their willingness to voluntarily participate in this study. These mothers were divided into two groups: 20 (experimental group) received the counseling program, and 20 (control group) did not receive the counseling program.

4.3. Research Instruments

A questionnaire was developed to measure procreation anxiety. The instrument's items were initiated by reviewing the related literature and consulting experts working with families of children with disabilities. The first draft of the questionnaire consisted of 43 items, which were later sent to seven academic staff members working in universities and interested in the fields of special education and psychology.

These academic staff were asked to refine the questionnaire items by suggesting additions, deletions, or amendments. Based on their revisions, the instrument was finalized with 30 items covering six dimensions: Psychological and Emotional (items 1-7), Cognitive (items 8-13), Religious (items 14-16), Physical (items 17-20), Social (items 21-26), and Sexual Dimension (items 27-30).

In terms of instrument validity and reliability, the process of developing the questionnaire items, particularly the refinement made by the academic staff, is a technique of face validity (Bryman, 2012). Five MCDs (out of the research participants) administered the questionnaire to ensure the clarity and understandability of the questionnaire content. This helped in further improving the instrument, which supported the determination of content validity (Creswell & Creswell, 2018).

Further, internal consistency validity was verified by calculating Pearson correlations between the items and their respective subdimension scores, and between subdimensions and the total score Table 1.

Table 1. Pearson correlations between the items and their respective subdimension scores, and between subdimensions and the total score.

Item	Dimension	Total	Item	Dimension	Total	Item	Dimension	Total
1	0.728**	0.578**	11	0.735**	0.699**	21	0.833**	0.795**
2	0.635**	0.543*	12	0.565**	0.671**	22	0.731**	0.695**
3	0.571**	0.551*	13	0.807**	0.716**	23	0.707**	0.715**
4	0.550*	0.542*	14	0.851**	0.834**	24	0.727**	0.682**
5	0.617**	0.566**	15	0.836**	0.720**	25	0.629**	0.515*
6	0.628**	0.717**	16	0.800**	0.777**	26	0.918**	0.848**
7	0.612**	0.585**	17	0.718**	0.705**	27	0.679**	0.632**
8	0.641**	0.486*	18	0.693**	0.655**	28	0.914**	0.840**
9	0.800**	0.774**	19	0.828**	0.812**	29	0.922**	0.790**
10	0.671**	0.603**	20	0.845**	0.773**	30	0.829**	0.765**

Note: *Significant at the ($\alpha \leq 0.05$) level.
**Significant at the ($\alpha \leq 0.01$) level.

The calculations shown in Table 1 are given based on piloting a sample (20) from outside the main participants of this research. However, the correlations between the items and their respective subdimension scores ranged between 0.550-0.922, and between subdimensions and the total score (0.486-0.848). These correlations could be considered as an indicator of internal consistency validity. Furthermore, reliability was assessed by conducting Cronbach's alpha test and the Split-half method, where the results showed acceptable values of reliability Table 2.

Table 2. Reliability indicator values.

Tool	Cronbach alpha	Split-half
Procreation Anxiety Questionnaire	0.959	0.926

4.4. Group Counseling Program

The group counseling program was designed according to the principles of existential therapies and developed based on existing literature. The program underwent a refinement process by a group of professionals who were working in the fields of psychology, counseling, and special education. The final form of the program met its aims and included twelve sessions; a brief description of each session is shown in Table 3.

Table 3. Brief description of the program sessions.

No	Session title	Aims
1	Orientation session	Building a rapport among the participants, creating a sense of closeness, knowing the objectives, clarifying the nature of the program, and establishing guidelines for teamwork.
2	Procreation anxiety	Explaining to mothers the concept of procreation anxiety, its causes, and its effects.
3	Great journey	Establishing a sense of freedom and responsibility toward making change among the mothers and increasing their awareness of pregnancy stages.
4	Satisfaction with life	Developing an understanding of the life satisfaction concept among the participants, enhancing their desire to pursue meaning in life, and recognizing that life's meaning itself cannot be born out of suffering.
5	Life purposes	Strengthening the mothers' belief in free will and increasing their awareness of the importance of proactive planning in dealing with challenging situations in their lives.
6	Positive perception of life	Raising mothers' awareness of the inherent presence of suffering in life, while fostering a deeper understanding of the concept of positivity and its role in living a meaningful life.
7	Overcoming challenges	Increasing mothers' understanding of the significance of experiential and empirical values in facing and managing life's challenges.
8	Social integration	Enhancing mothers' awareness of the importance of engaging with their social surroundings, as well as the critical role of family responsibilities in attaining satisfaction within family life.
9	I am a great mother	Teaching mothers about the essential procedures and considerations involved in planning for pregnancy.
10	Developing the concept of life satisfaction	Increasing mothers' understanding of the significance of living in the present while also planning for the future, alongside training them in mindfulness and present-moment living techniques.
11	The bright side of life	Increasing mothers' awareness and appreciation of the positive and meaningful aspects of life, even amidst challenges.
12	Closing session	Summarize the core themes covered in the counseling program, offering rooms for the mother to reflect on and share her personal experiences, assessing the overall effectiveness and impact of the program, and conducting the post-intervention measurement using the Procreation Anxiety Questionnaire.

4.5. Procedure

After the recruitment process was completed, the participants were randomly divided into two groups, each consisting of 20 mothers. The first group received the counseling program, while the second did not. It was agreed with the first group that the program sessions would be delivered at a special education center, which was a suitable place for all participants. Each session lasted one hour and was conducted three times per week. Before the commencement and after the completion of the counseling program, both group one and group two completed the questionnaire.

4.6. Analysis

To analyze the collected data, the Statistical Package for the Social Sciences (SPSS) was employed. Various calculations and tests were conducted to facilitate comparison and to examine the impact of the counseling program. These included means, standard deviations, ANCOVA, adjusted means, and standard errors.

5. RESULTS

Q1: To what extent do MCD suffer from procreation anxiety?

To answer this question, the researcher calculated the means and standard deviations of the participants' responses before they took part in the counseling program Table 4.

Table 4. Means and standard deviation of mothers' responses on the study instrument.

No.	Items	Means	SD	Order	Level
D1	Psychological and emotional dimension	3.83	0.71	4	High
1	I have fears about having another child with a disability.	3.93	0.83	3	High
2	I feel anxious when talking about fertility.	3.83	0.96	18	High
3	I have a concern that I might have another child with a different disability.	3.85	0.80	13	High
4	I frequently visit obstetricians.	3.85	0.80	14	High
5	I am willing to avoid having children.	3.80	0.88	22	High
6	My first child's disability caused me a shock.	3.80	0.72	19	High
7	I feel sad when I look at my child with disability.	3.75	0.84	26	High
D2	Cognitive Dimension	**3.88**	**0.72**	**1**	High
8	I lack a sense of security when thinking about having kids.	3.83	0.87	16	High
9	My hopes and dreams in life are shattering as I will not be able to have a complete child.	3.95	0.78	1	High
10	I have a thought of abortion out of fear of giving birth to a child with a disability.	3.83	0.87	17	High
11	I think that my child's disability has been a barrier to having another child.	3.95	0.85	2	High
12	I have thoughts about having another child with a disability.	3.80	0.91	23	High
13	I lack the ability to focus because of my anxiety about the health of my upcoming child.	3.90	0.84	6	High
D3	Religious Dimension	**3.74**	**0.69**	**6**	High
14	I practice my religious rituals regularly, and even more so for the well-being of my child.	3.70	0.82	29	High
15	I make sure to keep praying and worshipping for the safety of my children.	3.85	0.77	11	High
16	My child's disability is a test from my God.	3.68	0.69	30	High
D4	Physical Dimension	**3.80**	**0.74**	**5**	High
17	I suffer from continuous headaches when I think about having another child.	3.78	0.83	25	High
18	My heart races when I think about having children.	3.80	0.91	24	High
19	I feel short of breath when the topic of having children comes up.	3.70	0.85	28	High
20	I suffer from sleep problems due to thinking about having another child.	3.93	0.83	4	High
D5	Social Dimension	**3.84**	**0.70**	**3**	High
21	I avoid appearing in front of others during pregnancy.	3.88	0.72	8	High
22	I make relationships only with families who have children with disabilities.	3.75	0.74	27	High
23	I feel stranger in my home as I have a child with a disability.	3.80	0.94	20	High
24	I receive expressions of weakness and pity from others.	3.83	0.84	15	High
25	I create excuses to avoid attending social events.	3.90	0.78	7	High
26	I hide my pregnancy from others out of fear of having a child with a disability.	3.88	0.85	9	High
D6	Sexual Dimension	**3.86**	**0.75**	**2**	High
27	I avoid sexual contact with my husband out of fear of having a child with a disability.	3.90	0.84	5	High
28	I feel more anxious than pleasure during sexual contact with my husband.	3.88	0.88	10	High
29	I make any excuse to avoid sexual contact with my husband.	3.85	0.80	12	High
30	I warn my husband during sexual contact about the possibility of having a child with a disability.	3.80	0.94	21	High
	Total	**3.83**	**0.69**	**-**	High

As can be seen in Table 4, the overall mean of the participants' responses is high (3.83), which indicates that MCD are suffering from a high level of procreation anxiety. While the highest dimension mean is for the 'Cognitive Dimension' (3.88), the lowest is for the 'Religious Dimension' (3.74). In terms of the instrument items, the highest mean (3.95) is for item number (9), which states 'My hopes and dreams in life are shattering as I will not be able to have a completed child,' and the lowest mean (3.68) is for item number (16), which states 'My child's disability is a test from my God.'

Q2: Does the group counseling program influence the reduction of procreation anxiety among MCD?

To answer this question, the means and standard deviations of pre- and post-tests for both groups were calculated. The results of these statistical processes are shown in Table 5.

Table 5. Means and standard deviations of pre- and post-tests for both groups.

Dimension	Group	n	Pre-test		Post-test	
			M	SD	M	SD
Psychological and emotional	Control	20	3.90	0.53	4.06	0.59
	Experimental	20	3.76	0.85	3.09	0.71
Cognitive	Control	20	4.00	0.50	3.99	0.51
	Experimental	20	3.75	0.89	3.12	0.68
Religious	Control	20	3.80	0.52	4.05	0.66
	Experimental	20	3.68	0.83	3.12	0.69
Physical	Control	20	3.88	0.50	3.96	0.68
	Experimental	20	3.73	0.92	3.05	0.70
Social	Control	20	3.93	0.49	3.99	0.60
	Experimental	20	3.74	0.86	3.06	0.64
Sexual	Control	20	3.95	0.52	4.03	0.61
	Experimental	20	3.76	0.93	3.13	0.72
Total	Control	20	3.92	0.47	4.01	0.57
	Experimental	20	3.74	0.86	3.09	0.66

As it appears in Table 5, there are slight differences between control and experimental groups in pre-test results; the means of both groups are 3.92 and 3.49, respectively. Similarly, there are slight differences in post-test results; the mean of the control group is 4.01, while the experimental group has a mean of 3.09. This indicates a difference of 0.92 in favor of the control group. To determine whether these differences are statistically significant at the $\alpha \leq 0.05$ level, an analysis of covariance (ANCOVA) was conducted (Table 6).

Table 6. ANCOVA analysis was conducted to determine the differences between the control group and the experimental group for the pre-test according to each dimension.

Dimension	Source of variation	SS	DF	MS	F	p-value	η^2
Psychological and emotional	Pre-test	0.067	1	0.067	0.155	0.696	0.004
	Group	9.041	1	9.041	20.959	0.000	0.362
	Error	15.961	37	0.431			
	Corrected total	536.551	40				
Cognitive	Pre-test	1964.253	1	1964.253	1464.612	0.000	0.975
	Group	27.344	1	27.344	20.388	0.000	0.349
	Error	50.963	38	1.341			
	Corrected total	2059.602	40				
Religious	Pre-test	0.228	1	0.228	0.496	0.485	0.013
	Group	8.408	1	8.408	18.295	0.000	0.331
	Error	17.005	37	0.460			
	Corrected total	539.556	40				
Physical	Pre-test	0.037	1	0.037	0.076	0.785	0.002
	Group	8.352	1	8.352	17.100	0.000	0.316
	Error	18.072	37	0.488			
	Corrected total	518.188	40				
Social	Pre-test	0.011	1	0.011	0.029	0.867	0.001
	Group	8.456	1	8.456	21.450	0.000	0.367
	Error	14.586	37	0.394			
	Corrected total	520.333	40				
Sexual	Pre-test	0.803	1	0.803	1.858	0.181	0.048
	Group	7.346	1	7.346	16.991	0.000	0.315
	Error	15.997	37	0.432			
	Corrected total	536.125	40				
Total	Pre-test	0.063	1	.063	.162	0.690	0.004
	Group	8.159	1	8.159	20.824	0.000	0.360
	Error	14.497	37	.392			
	Corrected total	527.866	40				

It can be seen in Table 6 that there are statistically significant differences at the ($\alpha \leq 0.05$) level between the means of procreation anxiety among MCD according to group type (control and experimental), with a calculated F value of 20.824, which is significant. However, to define the direction of the differences more accurately, adjusted post-means and standard error were tested as explained in Table 7.

Table 7. Adjusted means and standard errors for the control and experimental groups.

Group	N	Adjusted post-mean	Standard error
Control	20	4.008	0.141
Experimental	20	3.097	0.141

The table clarifies that the adjusted post-mean for the mothers who have not received the counseling program is 4.008, while it is 3.097 for the mothers who have received the counseling program, which indicates that these differences are statistically significant. These differences are in favor of the control group. In other words, these results demonstrate that the counseling program has decreased procreation anxiety among the MCD. Furthermore, to determine the effect size of the counseling program in reducing procreation anxiety among the mothers in the experimental group, Eta squared (η^2) was calculated. Its value was approximately 0.360, indicating that 36% of the reduction in procreation anxiety was attributable to the counseling program.

Q3: Does the group counseling program effectively sustain low procreation anxiety levels among MCD?

To measure whether the group counselling program has a constant effect, the means and standard deviations of responses of the experimental group at the post-test and follow-up test, and a paired samples t-test were employed. The results are shown in Table 7.

Table 8. Means, standard deviation, and the T-test for the post-test and follow-up test.

Test	N	M	SD	T	DF	Sig.
Post	20	3.09	0.66	-1.713	19	0.103
Follow up	20	3.10	0.65			

Table 8 shows that the mean for the post-test is 3.09, while the mean for the follow-up test is 3.10. To detect the statistical differences between the two measures, a paired samples t-test was conducted. The statistical value was 0.103, which indicates that there are no statistically significant differences between the post-test and follow-up test. Therefore, it can be concluded that the counseling program has a continuous effect on reducing procreation anxiety among MCD.

6. DISCUSSION

This study was conducted to investigate procreation anxiety among MCD. At first glance, it can be argued that the participants of the current study have many similarities to other mothers who are raising a child with a disability worldwide; they are experiencing a high level of anxiety (Bourke-Taylor et al., 2022; Smith & Blamires, 2022; Turnage & Conner, 2022). Within the participants' socio-cultural context, thinking of having an additional child triggers procreation anxiety. Specifically, the item 'my hopes and dreams in life are shattering as I will not be able to have a completed child' was rated as the highest concern by the research participants; this can be illustrated by the fact that having a larger family size is often perceived as a prominent position in Jordan, while family planning is not seriously considered (AlHamawi, Khader, Al Nsour, AlQutob, & Badran, 2023; Hyassat, 2013). Thinking of this position may trigger anxiety as it is no longer affordable for mothers after they have given birth to a child with a disability. Further, the item 'My child's disability is a test from my God' was the lowest anxiety source; this can be attributed to the religious issue wherein people perceive disability as a measure of testing their faith to distinguish between strong and poor believers. Therefore, the participants might accept their children's disabilities to prove their strong belief, and

this is a common perception in many countries where religious spirituality is popular (Bryant, Ahmed, Ahmed, Jafri, & Raashid, 2011; Raman et al., 2010; Ravindran & Myers, 2012).

Like the participants of previous research, MCD in this study could alleviate their anxiety by receiving intervention programs. For example, parents of children with hearing problems felt supported by a parents-to-parents program (Lim et al., 2025). Similarly, stress among carers of children with autism spectrum disorder was relieved as a result of participating in a supporting program (Onovbiona et al., 2025). In a systematic review of the research related to the program delivered to parents of children with disabilities (Lancaster et al., 2023), findings revealed that the counseling program reduced not only the anxiety among the parents but also improved their quality of life and well-being.

The results of the current study are consistent with those reported by previous research in Arab countries; for example, in Egypt, parents of children with intellectual disabilities who participated in a training program demonstrated a reduction in their future anxiety (Sebaie et al., 2024). In Saudi Arabia, Marzouk and Ghaliti (2019) conducted a study to assess the effectiveness of a counseling program among parents of children with autism spectrum disorders. Using a scale to measure anxiety, the post-test proved that the counseling program decreased participants' anxiety after they received the intervention.

7. CONCLUSION

Counseling programs are substantially significant for families of children with disabilities as they face considerable anxiety triggers. However, the unique aspect of this research is considering procreation anxiety among MCD, which is often overlooked in existing literature. This study contributes to the existing international literature by providing responses from part of the Middle East. Specifically, it offers the experiences of Jordanian MCD who live within a different sociocultural context that differs from Western countries. This data would help other researchers worldwide to inform their studies and compare their results.

The current research participants had been experiencing a high level of procreation anxiety, which was then reduced by the counseling program. Accordingly, this study confirms the positive influence of the counseling program in diminishing anxiety generally and procreation anxiety specifically. The current research, as well as existing literature, has demonstrated the effectiveness of these programs in helping families deal with their anxiety; therefore, it is highly important to involve families of children with disabilities, particularly the mothers, in such programs.

The current results highlight the need for policies that guarantee coordinated support services that can be delivered through flexible hours for MCD. These services may reduce their daily stress and improve their well-being. Vivid related topics can be considered in future research, such as assessing future anxiety among parents of children with disabilities, setting up effective intervention programs to support families, and exploring formal and informal support available to the families of children with disabilities.

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Institutional Review Board Statement: The Ethical Committee of the Queen Rania Faculty for Childhood, The Hashemite University, Jordan has granted approval for this study on 8 May 2024 (Ref. No. FC250613).
Transparency: The author states that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
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