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Effect of an infertility counseling program on perceived stigma among infertile female candidates for intra-uterine insemination

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ABSTRACT

Background & aim: Inability in childbearing is considered a deviation from the norms; therefore, the stigmatized women need to develop some effective strategies to meet this tough challenge. The present study was conducted to determine the effect of infertility counseling programs on perceived stigma among infertile women who were candidates for intrauterine insemination.

Methods: This quasi-experimental study was carried out on 135 women referring to the infertility center, Zahedan, Iran, during July 7th to December 12th, 2018. The subjects in the intervention group were invited to take part in a three-session counseling program, whereas the control group received the routine care. The perceived stigma was evaluated using the Infertility Stigma Scale. The data analysis was performed in SPSS software (version 21) using Fisher's exact test, Chi-square test, Mann-Whitney U test, and independent t-test.

Results: The results indicated that women in the intervention group expressed less infertility stigma, as compared to the control group (P <0.001). Additionally, these women manifested less infertility stigma in subscales including public stigma (23.42±2.84 vs. 12.52±2.14; P<0.001), self-devaluation (19.58±2.04 vs.9.65±1.50; P<0.001), social withdrawal (14.04±1.65 vs.7.25±1.54; P<0.001), and family stigma (12.70±1.94 vs. 9.23±1.72; P<0.001) after the intervention.

Conclusion: Infertility counseling can help women to remedy their sense of self-devaluation. Additionally, establishment of close relationship with others and appropriate release of innermost feelings and thoughts can decrease the perceived public and social stigma.

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Introduction

Clinically, infertility is a disease of the reproductive system defined as the failure to achieve a clinical pregnancy after 12 months or more despite regular unprotected sexual intercourse (1). Based on the evidence, the prevalence of infertility is at its highest level in some regions of the world, such as the Middle East (2). In the Middle East and North Africa, the repvalence of total clinical (both primary and secondary) infertility has been estimated at 17.2% (3); in addition, this rate is reported as 13.2% in Iran (4).

As indicated in the available literature, in a pronatalism society (e.g., Iran), sociocultural norms, as well as governmental population policy (e.g., paying cash subsidies for the

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citizens), put great emphasis on childbearing. In such a situation, inability in childbearing is considered a deviation from the norms. Consequently, infertility could turn into a social stigma (5-9) with women bearing the overall burden of infertility and its associated stigmatization more than men (10, 11). Previous studies in Iran indicated that women stigmatized with infertility are susceptible to discrimination, loss of status, and physical violence. Moreover, they experience psychological uncertainty (i.e., divorce or pressure on husband to go for the second marriage), marital instability, social exclusion, and partial deprivation by family members (6, 12).

In response to increased stress and tensions, women use various coping strategies to manage the stigma of infertility, protect themselves from harm, or meet challenging situations (13, 14). In this regard, women may use angry or anxious emotional responses which can create tension in their social relations (15). On the other hand, some women prefer to use active avoidance to experience less infertility-induced stress and manage to live with infertility (10, 16, 17). Previous studies demonstrated that maladaptive coping strategies (e.g., emotionally focused and avoidance) increase psychological distress (10, 14, 18), while positive coping strategies (confrontation, reaction control) have a positive impact on self-confidence and decreased vulnerability to stigmatization (19, 20).

Provision of infertility services in low-resource settings protects the reproductive rights (21, 22) and brings fresh hope to infertile women to have pregnancy with new reproductive technologies (23). In this regard, Molood Infertility Center was established in Zahedan, the capital of Sistan and Baluchestan, as one of the most deprived provinces in Iran with rapid population growth. This center was set up in May 2017 to treat infertile couples with intrauterine insemination (IUI) and in vitro fertilization (IVF), in accordance with national and international standards. Meanwhile, based on the evidence, the process of medical intervention can lead to more stigmatization in infertile women, by transforming infertility from a private pain to a public crisis (8). Consequently, the women who fear stigmatization may refrain from referring to infertility centers and receiving care and services (24).

In addition to medical treatments (e.g., IUI), it seems necessary to provide women with opportunities to learn new adaptive behavior to cope with the negative effects of infertility (25). Meanwhile, assertive communication is an effective means of adaptation to conflicts, involving a relatively honest and direct expression of needs, thoughts, and feelings in a socially appropriate way without any significant anxiety, as well as the consideration of the feelings and rights of others. Assertive communication can enable people to solve interpersonal problems without distortion, which helps them to maintain relationships with others (26, 27).

Previous studies have commonly addressed the stigma and its effects on infertile couples (6, 12). Therefore, this study was conducted to determine the effect of an infertility counseling program (by staff members without specialized training in mental health care) on perceived stigma among infertile women who were candidates for intrauterine insemination. The included subjects were representative of individuals who did not need professional consultation of mental health professionals (28), in a disadvantaged province in Iran.

Materials and Methods

This quasi-experimental study was carried out on 135 women referring to Molood Infertility Center at Ali-ibn Abi Talib Hospital, Zahedan, Iran, during July 7 to December 12 in 2018. The ethical approval for the present study was obtained from the Zahedan University of Medical Sciences, Zahedan, Iran.

The sample size was calculated for each group (α=0.05, β=0.20, $z1-\alpha/2$=1.96, and $z1-\beta$=0.84) based on a pilot study s2 (the standard deviation of the stigma score in the control group), and s1 (the standard deviation of the stigma score in the control group) were considered 3.93, and 5.73 respectively, and considering a difference of at least 1.25 score between the two groups). Therefore, the sample size was estimated at 70 using the following formula:

$$\frac{(s_2)^2+(s_1)^2*(z_1-\alpha/2)+(z_1-\beta)^2}{d^2}$$

The study population included the women who were candidates for IUI. The inclusion criteria entailed: 1) failure to achieve a clinical pregnancy after 12 months of regular unprotected sexual intercourse, 2) Persian literacy, 3) no previous history of undergoing assisted reproductive techniques, 4) no history of mental illness or psychiatric antecedents (based on the history of medication use or hospitalization in a mental ward), and 5) no living child. On the other hand, the exclusion criteria were: 1) unwillingness to continue participation in the study and 2) absence from counseling sessions.

Once the women were candidates for IUI, informed consent was obtained, and the objective of the study was explained. Subsequently, the women were randomly assigned to two groups of routine care (n=70) and intervention (i.e., infertility counseling; n=70) using systematic random sampling and interval sampling (29). Since we did not initially have a sampling frame of women who were candidates for IUI and women were visiting regularly, the allocation of women to the groups started randomly using random numbers. A fixed interval of one week was used to reduce the information leakage. Therefore, the participants in each group had a different time schedule to refer to the center during the treatment period. Consequently, the sampling was performed for a week (for the intervention group), and then in the next week, sampling was carried out for the control group and continued until the required sample size was obtained. Out of 140 eligible women, 70 cases were allocated to each group.

In the control group, the women received the routine care and were only provided with information about diagnostic tests (e.g., laboratory and hysterosalpingogram), prescription medicines, and ultrasound check-up for the monitoring of follicle growth and injection of human chronic gonadotropin (hCG). All information and advice was provided (verbal or written) by two midwives, and one gynecologist (i.e., infertility fellowship) who worked at the center. Owing to the crowd of people at the center, there was not adequate opportunity for giving information. To this end, two or three women were admitted to the doctor's or midwife's room simultaneously. Therefore, there was limited opportunity for women to ask questions or talk about their concerns privately. Women were also given the center's telephone number to ask their questions. In this group, two women (2.85%) did not complete the Infertility Stigma Scale (ISS) for the second time.

After receiving the routine care, the participants in the intervention group were invited to take part in a three-session infertility counseling program. Individual counseling sessions were held in a private room at the fertility center in the presence of other women and a counselor. At the end of the first session, the women were given a CD about relaxation techniques; however, most women preferred to receive training material on their mobile phones rather than CD. Therefore, the data were shared using mobiles (via short-range wireless, Bluetooth, or the Telegram messenger). Additionally, the women were trained to complete the stigma checklist, addressing the conditions that may contribute to infertility stigma, individuals from whom they suffered, where they were more stigmatized, and women's response against stigmatization. They took the checklist home and brought it back the next session. Furthermore, besides the centrer's phone number, the women were given the researcher's telephone number for further support and information. In the second session, the use of emotional regulation coping strategies (e.g., relaxation) to control emotions (e.g., anger) and learning how to express their feelings and thoughts (e.g., using assertive techniques) were stressed (26, 27). Moreover, they were asked simultaneously to generate a solution to the conflict (e.g., changing the circumstances or conversation that is creating stress, as a starting point for other appropriate coping responses) (30, 31). Essential components and contents of the sessions are shown in Table 1.

Table 1. Content of each interventional session

Session, duration, and content of education for the intervention group
1. Lasted about 90 minute **Time:** When the women referred to the infertility center with the results of the infertility tests and the couples became candidates for IUI **Content**: 1. The women were given some information about the female genital system, menstrual cycle, infertility concepts (causes and contributing factors to infertility and its prevalence), and finally IUI technique and procedure, 2. The concept of stigma was explained, and the women were asked to explain their experiences and provide a list of sources of stigma (from the perspective of women), 3. Women were encouraged to talk about their fears and concerns, 4. Simple mind-body relaxation techniques (breathing techniques) were taught to them. Additioanlly, the women were provided with the researcher's telephone number for further information and support. ***(Lecturer using PowerPoint presentation, demonstration of breathing techniques, assessing women's performance, CD (relaxation techniques), and discussion)***
2. 60-90 minutes **Time:** When the women referred for baseline sonography (i.e., the 1-3rd day of menstrual cycle), and before the onset of ovulation stimulation **Content:** 1. The main sources of stigma were identified based on the provided list, and different coping strategies for these situations were discussed, 2. Women were informed about prescriped medicines (i.e., dose, timing, route of use, and side-effects), 3. Ultrasound check-up for monitoring of follicle growth was explained, 4. The performance of relaxation techniques were emphasized. ***Face to face training, assessing women's performance, lecturer using PowerPoint presentation, discussion***
3. 60-90 minutes **Time:** When the woman referred to the center for the ultrasound monitoring of ovarian follicular growth **Content:** 1. Explaination of ultrasound check-up for the monitoring of follicle growth and injection of human chronic gonadotropin (hCG), 2. Explanation of the risk of cycle cancellation (poor ovarian response to gonadotropins or hyperstimulation) and instructions for the upcoming treatment cycle. ***Lecturer using PowerPoint presentation, discussion***

Infertility counseling program was developed according to the European Society of Human Reproduction and Embryology Guideline (32). The guideline is organized to address different psychosocial needs of infertile client, which can be behavioral (e.g., exercise), relational (e.g., relationship with family), emotional (e.g., anxiety), and cognitive (e.g., treatment concerns and knowledge) (28, 33). It was suggested that all staff with medical/infertility knowledge, a basic understanding of the psychological issues related to infertility, and communication skills provide infertility counseling. However, the staff had to avoid the areas beyond their knowledge (e.g., psychological problems) and refer the patients to mental health professionals (33).

In the present study, the counselor was a postgraduate counseling student with midwifery background, trained on a different form of counseling related to infertility techniques to deal with intense emotions (e.g., relaxation techniques) (34), coping with stigma strategies (18), and assertiveness (35). After enrollment, the demographic and reproductive characteristic forms and ISS were filled out for all participants. Following the third session, the ISS was completed for all women again.

A demographic and fertility characteristics form and the ISS (36) were used to collect the data. The ISS is a reliable and validated scale to measure the levels of stigma experienced by infertile women when receiving infertility treatment (36). This scale consists of 27 items, rated on a five-point Likert scale ranging from totally disagree (scored as 1) to totally agree (scored as 5). This instrument has a score range of 27-135 and no cut-off point has yet been proposed for this scale.

Therefore, continuous data were used for statistical analysis with higher scores indicating higher perceived stigma. The ISS consists of four subscales, namely self-devaluation (7 items), social withdrawal (5 items), public stigma (9 items), and family stigma (6 items). The reliability and validity of the Persian version of this scale have been already established (37).

In the present study, the internal consistency of the total scale (α=0.95) and subscales was confiremed, rendering the Cronbach's alpha coefficients of 0.89, 0.9, 0.86, and 0.7 for self-devaluation, social withdrawal,

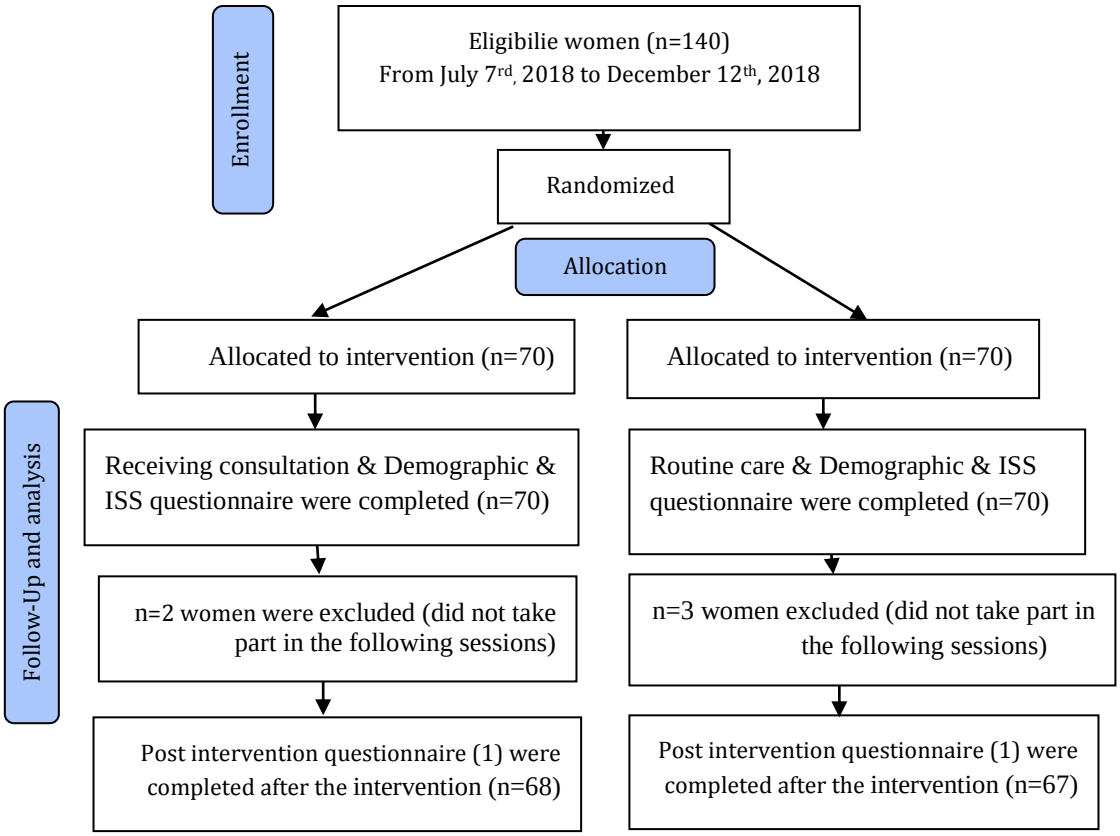
public stigma, and family stigma subscales, respectively. In the current research, the ISS scale was completed to determine the level of women's infertility stigma before the intervention (i.e., when the women became candidates for IUI) and after the intervention (i.e., when the women referred to the center for the ultrasound monitoring of ovarian follicular growth).

The statistical analysis was run in SPSS, version 21. The Kolmogorov-Smirnov test was used to verify the normal distribution of the continuous variables. Continuous variables, with normal distribution, were analyzed performing independent sample t-test and Student's t-test. In addition, the data with a non-normal distribution were subjected to the Mann-Whitney U test. Chi-square and Fisher's exact tests were run to compare categorical and binary variables between the two groups. Additionally, two-tailed tests were applied to compare the variables between the two groups. A p-value less than 0.05 was considered statistically significant.

Results

A total of 140 eligible infertile women who were candidates for IUI were randomly assigned into control (n=70) and intervention (n=70) groups. However, five women were excluded from the intervention (n=2) and control (n=3) groups due to nonattendence in the following session. Consequently, the control and intervention groups included 68 and 67 eligible women, respectively (Figure 1).

Figure 1. Flow diagram of study participants



The two groups were not significantly different concerning the demographic characteristics (Table 2).

Table 2. Comparison of women's characteristics between groups

	Groups		
	Control (n=68)	**Intervention (n=67)**	**P-value‡**
Demographic	**N (%)**	**N (%)**	
Age (years)			
≤22	5 (7.4)	9 (13.4)	
23-26	31 (45.6)	24 (35.8)	
27-30	25 (36.7)	20 (29.8)	
30-34	7 (10.3)	14 (21)	0.17
Education			
Primary or secondary school	18 (26.5)	28 (41.8)	
High school	39 (57.4)	27 (40.3)	
Academic	11 (16.1)	12 (17.9)	0.11
Employment status			
Unemployed/housewife	60 (88.2)	59 (88.1)	
Employed	8 (11.8)	8 (11.9)	0.9
Ethnicity			
Baloch	34 (50)	40 (59.7)	
Fars	34 (50)	27 (40.3)	0.2
Previous marriage			
No	68 (100)	65 (97)	
Yes	0 (0)	2 (3)	0.2†
Fertility characteristics			
Factor of infertility			
Male	8 (11.8)	7 (10.5)	
Female	29 (42.6)	38 (56.7)	
Both	17 (25)	9 (13.4)	
Unknown	14 (20.6)	13 (19.4)	0.28
Spontaneous abortion			
No	63 (92.4)	60 (89.5)	
Yes	5 (7.4)	7 (10.5)	0.5
Stillbirth			
No	66 (97.1)	63 (94.0)	
Yes	2 (2.9)	4 (6.0)	0.4
	(Mean±SD)	**(Mean±SD)**	
Duration of infertility (years. month)	3.31±0.75	3.44±1.30	0.9*

‡ Chi-square, †Fisher's exact test, * Mann-Whitney U-test

In neither group, women had any children from their previous marriages, adopted children, or had a history of ectopic pregnancy. Additionally, no significant differences were observed between the groups with respect to medical diseases (P=0.2). The data showed that 6 (8.82%) and 10 (14.93%) women in the control and intervention groups had a history of medical diseases, respectively. In both groups, the most common problem was polycystic ovary, followed by thyroid related diseases.

After the intervention, the women in the intervention group obtained a significantly lower score than that in the control group in temr of infertility stigma (23.42±2.84 vs. 12.52±2.14; P<0.001), self-devaluation (19.58±2.04 vs.9.65±1.50; P<0.001), social withdrawal (14.04±1.65 vs.7.25±1.54; P<0.001), and family stigma (12.70±1.94 vs. 9.23±1.72; P<0.001) subscales. The main findings are shown in Table 3.

Table 3. Comparison of infertility stigma score between groups before and after intervention

Time	Infertility stigma scores	Groups		P-value
		Control	Intervention	
		Mean (SD)	Mean (SD)	
Before intervention	Total score	67.41 (3.93)	66.35 (5.73)	0.2†
	Subscales:			
	Self	17.75 (1.94)	17.35 (1.95)	0.15*
	Social	14.26 (1.68)	13.79 (1.91)	0.20*
	Public	21.97 (2.01)	21.26 (2.73)	0.09†
	Family	13.42 (1.95)	13.94 (2.50)	0.18†
After intervention	Total score	69.76 (4.5)	38.67 (4.75)	0.001*
	Subscales:			
	Self	19.58 (2.04)	9.65 (1.50)	<0.001*
	Social	14.04 (1.65)	7.25 (1.54)	<0.001*
	Public	23.42 (2.84)	12.52 (2.14)	<0.001†
	Family	12.70 (1.94)	9.23 (1.72)	<0.001*

†Independent t-test, *Mann-Whitney U-test
The results are significant at 0.05 probability level.

Discussion

The accounts made by women during the consultation sessions showed that women with infertility problems who were candidates for IUI commonly used maladaptive coping behaviors (e.g., active avoidance and emotional-oriented responses toward others). In addition, the data demonstrated that infertility counseling using assertiveness could improve the women's perceived stigma in general. Moreover, the data revealed that although he woman's stigma status related to infertility improved in all subscales after the intervention, the highest reduction in perceived stigma was related to public stigma, self-devaluation, social withdrawal, and family stigma subscales.

As sampling was performed at the infertility center, it was assumed that women accepted their infertility (i.e., as a form of active confrontation) and developed realistic attitudes by referring to the infertility center. Establishment of the infertility center in this disadvantaged province brings fresh hope to infertile women to beat the defects of their bodies through access to and use of assisted reproductive technology and overcome the stigma of failed motherhood (19, 21, 38).

Moreover, referring to the infertility center and talking with other infertile peers helped women to compare their personal situation and infertility with other infertile women ("I am much younger than many other women who refer to the center") who needed highly complex techniques which could ultimately help them to cope with infertility (19). All the aforementioned explanations can clarify the relatively similar mean scores of the two groups before the intervention.

However, in the intervention group, the provision of factual information about infertility (e.g., prevalence, nature of the condition, and outcomes of diagnostic and treatment methods) helped women to refine their experiences and perceive themselves as being normal (19). This can explain the significant decline in the sense of self-devaluation in the intervention group. Previous studies in the field of mental illness showed that information provision about illness can have a small to moderate positive impact on the process of stigmatization (39, 40).

In the present study, the data showed that the public and social withdrawal subscales of perceived stigma were improved significantly. This improvement can be due to several reasons. First, as the previous findings (30)

revealed, learning the use of relaxation techniques enables women to regulate the expression of negative emotions (e.g., anger management) and achieve their goals despite the present prejudice. Second, the provision of practical strategies using assertiveness helps infertile women to improve their social communication skills to create a close relationship with others and prevent others from abusing them (41). Moreover, the literature review showed that in Asian and Middle Eastern cultures, training for assertiveness may conflict with important family values (42). In such situations, it is essential that women express their innermost feelings and thoughts appropriately (in a culturally sensitive manner with more traditional forms of deference and respect) (27, 42).

Sistan and Baluchestan has the lowest level of socioeconomic development. In addition, this province is mostly inhabited by the Baluch ethnicity, who belong to the Sunni sect of Islam (43). In this regard, the literature review showed that although the cultural values of some ethnic groups influence fertility (17, 44), the governmental policies of paying cash subsidies and Sunni perspectives have positive effects on the fertility rate (7). A related study conducted in Iran revealed that 40% of married couples in Sistan and Baluchestan consider four children or more as the ideal number of children (44). Therefore, in such situations where having children is of utmost importance, couples are under pressure to have children to fulfill societal and familial expectations (6, 44). All these realities can explain the low level of decrease in family stigma in the present study.

Conclusion

Our findings showed that infertile women use commonly maladaptive coping behaviors (e.g., emotional arousal and active avoidance). The staff should provide infertility counseling (including assertive communication component) to help the infertile women attain their goals in life despite the present prejudice. Based on the present study, provision of factual information contribute the women to refine their experiences and allay the sense of self-devaluation. Additionally, social communication skills assisted the women to create a close relationship with others and express their inner feelings and thoughts appropriately, thereby decreasing perceived public and social stigma. Moreover, as infertility stigma is associated with the values and attitude of people, public health programs should be implemented to address infertility stigma at the community level.

There are some limitations that should be considered when interpreting these findings. First, the present study was conducted only on women who were candidates for IUI and referred to a specific infertility center for treatment. Therefore, the generalizability of data to those who do not seek infertility treatments or refer for advanced infertility technology can be questionable. Secondly, we could not separate the consequences of male and female infertility, and primary and secondary infertility on women's perceived stigma. Thirdly, as the previous studies indicated, short-term interventions may only have short-term impacts (40). Therefore, there is a need to conduct studies with longer follow-up to study the lasting impacts of this type of intervention.

Ethical Considerations

This work was supported by the Zahedan University of Medical Sciences (grant No.: 8827, June 17, 2018). Ethical approval for the present study was obtained from Zahedan University of Medical Sciences (June 17, 2018; IR.AUS.REC:1397.142), Zahedan, Iran. Furthermore, the study was approved by the director of the Ali-ibn Abi Talib Hospital and Molood Infertility Center, Zahedan. The authors would like to acknowledge all the women for their participation in this study. We also appreciate the staff of the Molood Infertility Center for their support to perform this study.

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Conflicts of interest

The authors declare no conflicts of interest.

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