Original Article

The validity and reliability of sexual and reproductive health needs questionnaire among Persian infertile women

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Abstract

Context: Infertile women may have a lot of problems in the sexual and reproductive health (SRH) area. Some of these problems are sexually transmitted infections, sexual risky behaviors, high-risk pregnancy history, HIV/AIDS, and sexual violence. There are some reliable questionnaires for infertility health needs, but no comprehensive instrument was available to address their SRH needs.

Aims: This article aimed to assess validity and reliability of Persian version of SRH needs questionnaire among Iranian infertile women.

Settings and Design: In this psychometric study, validate SRH needs questionnaire in infertility Center of Imam Khomeini Hospital in Sari.

Material and Methods: The Persian version of the SRH needs questionnaire by Khani et al. was selected to validate for infertile women. Face validity, content validity and reliability were assessed. Impact score to assess quantitative face validity, content validity ratio (CVR) and content validity index (CVI) to assess the content validity and Cronbach's alpha and intera-class correlation coefficient (ICC) to assess its reliability were calculated.

Statistical Analysis: Analysis of ICC, Reliability was used for data analysis.

Results: In the qualitative content validity process, 25 questions were added and 5 questions were omitted in the panel of experts. Furthermore, 29 questions achieved a CVR <0.62 and 13 questions had a CVI <0.79. The Cronbach's alpha and ICC of the questionnaire were 0.895 and 0.945, respectively.

Conclusions: The Persian version of SRH questionnaire prepared for infertile women is a valid and reliable questionnaire and can be used by healthcare providers for assessing of infertile women's SRH needs.

Keywords: Infertile women, Questionnaire, Reliability, Reproductive health, Sexual health, Validity

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INTRODUCTION

Infertility is failure and inadequacy for getting pregnant among women in the reproductive age who have had an unprotected sexual activity for 1 year.[1] More than 186 million women suffer from infertility in developing countries.[2] The increasing problem of infertility has caused

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worries and psychological pressure.[3] Infertile women have unpleasurable experiences with regard to sexual and reproductive healthcare services.[4] sexually transmitted diseases (STDs) and high-risk sexual behaviors,[5] abortion, pelvic inflammatory diseases, history of unplanned pregnancy history leading to abortion,[6] and Chlamydia infection among infertile women are more than fertile women.[7,8] In fact, STDs and insufficient sexual healthcare services increase the rate of infertility[9]

Preventive reproductive healthcare services are described as the accessibility to services and checking healthcare needs equally and according to the law without discrimination.[10-12] Providing sexual healthcare services and fertility care is a basic part of the human right.[13] Sexual healthcare services and fertility care are consisted of the improvement of the postpartum care program after childbirth, the elimination of unsafe abortion, family planning and infertility program, prevention and treatment of STDs/HIV, screening of cervical cancer, and encouragement of healthy sexual activity and sexual violence against women.[14,15]

The assessment of sexual and reproductive healthcare services is required for the identification of social and healthcare priorities and the allocation of resources with the aim of decreasing healthcare inequality.[12] There are some instruments to assess sexual and reproductive healthcare among the different groups of Iranians with different ages and genders. For instance, sexual and reproductive healthcare needs in the group of married women and men[16,17] teenagers,[18,19] and a vulnerable group such as sex workers and women with HIV[20-22] have been assessed using qualitative and quantitative studies. In Iranian studies, infertile couples' healthcare needs were discussed.[23,24] Furthermore, there are some studies on health and sexual disorders among infertile women.[25,26]

According to the World Health Organization (WHO) a standard questionnaire[22] in infertile women help with the assessment of sexual and reproductive health (SRH) needs, the screening of breast and cervical cancer, motherhood, family planning, sexual behaviors, STDs/HIV/AIDS, sexual violence, and gender-related issues. In a study, the UNFPA, NEDICO questionnaire (2008)[22] was translated and adapted to the Persian language. They reported its validity and reliability in a public population group.[12] However, infertile women have a lot of problems in SRH[4-8] there were no instruments regarding their sexual and reproductive healthcare needs. This study aimed to assess the validity and reliability of SRH needs questionnaire among an Iranian sample infertile women.

MATERIAL AND METHODS

Instrument

The Persian version of the SRH needs among Mobile and Vulnerable Population Communities in Zimbabwe questionnaire by the UNFPA, NEDICO (2008)[22] was provided for women attending to healthcare centers by Khani *et al*.[12] that was consisted of 126 questions as follow: 19 questions for demographic data, 40 questions for safe motherhood, 18 questions for family planning, 12 questions for sexual behavior and its history, 9 questions for STDs, 12 questions for HIV/AIDS and 16 questions for sexual violence and gender-based violence.[12] The instrument was assessed regarding validity and reliability as below:

Validity and reliability of the instrument

Face validity

Two methods of qualitative and quantitative were used to assess face validity.

To assess qualitative face validity, a team consists of 20 infertile women and 10 experts including infertility fellowship,[2] SRH,[4] health education[2] and M. Sc. degree of counseling in midwifery[2] analyzed the difficulty level, ambulation, unmatched options of questions.[12]

For defining quantitative face validity, the impact score of each question calculated. First, for each question, A five-point Likert scale was used with not important = 1, little important = 2, important = 3, very important = 4, and extremely important = 5.[12,27] Then, this questionnaire gave to 20 infertile women (primary or secondary infertility, age 18–49 years, with any cause of infertility, have the willingness to participate in research) attending to infertility Center of Imam Khomeini Hospital in Sari, northern Iran and after filling the questionnaires SPSS version 16 (SPSS Inc., Chicago, IL, USA), impact score calculated by following formula:

(Impact score = Frequency (%) × Importance). Those questions with an impact score of >1.5 considered appropriate.[27]

Content validity

Qualitative content validity

For analyzing qualitative content validity, 10 sexual and reproductive experts were requested that provide their comments. In this phase, they discussed on which questions needed to add in the questionnaire or to get modified.[28]

Quantitative content validity

For assessing quantitative content validity, 10 experts were asked to give their opinion about the necessity of the

questions in terms of "it is necessary" and "it is helpful but not necessary," and "it is not necessary "and content validity ratio (CVR) for all questions was calculated (according to following formula).

For identifying content validity index (CVI), the terms "not related (1 point)," "somehow related (point 2)," "related (point 3)," and "strongly related (point 4)" were used. The CVR score more than 0.62 considered acceptable. CVI for all items was calculated according to the total acceptable point (point 3 and 4). Questions with score <0.79 also omitted.[28]

Reliability

For checking the reliability of the instrument, questionnaire gave to 20 infertile women twice with 1–2 weeks intervals. Test-retest method and Cronbach's alpha were employed. The internal correlation coefficient (ICC) for all domains was >0.40 which showed normal situation.[29] Cronbach's alpha was >0.71 showing appropriate reliability instrument.[12] All statistical methods were analyzed using SPSS 16 (SPSS Inc., Chicago, IL, USA).

Ethical consideration

Permission from research center of Mazandaran University of medical science was obtained (Ethical code: 30–96). The research objectives explained to research units and ensured them for confidentiality of information collected from participation, and they are volunteered to participate in this study then obtained written consent from participation.

RESULTS

Face validity

In the qualitative face validity phase, the experts provided some comments on the questions regarding difficulty, ambiguity so on, which led to some changes. According to their comments, the number of questions was too much. However, the researchers believed that respondents could answer questions continuously and because of very high number of skipping questions, the required time for responding questions was low. In the quantitative phase, all the questions achieved the impact score >1.5 indicating their high importance in the field of infertility.

Content validity

In the qualitative phase, 19 questions were included, five questions were deleted, and 10 questions were modified [Table 1]. The modifications were performed on SRH about the number and distance between children, use any type of birth control method, referral to healthcare centers for pregnancy care, sexual activities, and taking the pregnancy decision.

Table 1: The added, modified and omitted questions in the qualitative content validity phase of sexual and reproductive health needs questionnaire for infertile women

Question numbers	Questions
	Added
1	How many days during the last week you did physical activity?
2	During the days you had physical activity, how much time did it take?
3	Does your husband do smoking? If yes, how many times during a day?
4	Does your husband use hookah? If yes, how many times during a week?
5	Do you do smoking? If yes, how many during a day?
6	Do you use hookah? If yes, how many times during a week?
7	Do you drink alcohol? If yes, how many cups?
8	Did you do pap smear test before your treatment for infertility? If yes, what was the result?
9	Did you do self-breast exam checkup monthly, before your treatment for infertility? If yes, what was the result?
10	Did you visit to any doctors' team for breast problem checkup before your infertility treatment? If yes, what was the result?
11	If you are eligible, did you do mammography before your infertility treatment? If yes, what was the result?
12	What is your type of infertility?
13	Did you visit a doctor after the infertility diagnosis?
14	What was the time duration between infertility and visit for treatment?
15	What was the reason for a lack of visit to the doctor after the diagnosis of infertility?
16	What is the reason for your infertility?
17	How long did you were unfertilized?
18	Do you have infertility treatment background? For how many times?
19	What is your infertility treatment type?
	Modified
20	Have you ever got pregnant?
21	What was your age during the first pregnancy?
22	What was your type of childbirth?
23	Regarding SRH for example the number and time distance between children, the use and type of birth control, visit to healthcare center for pregnancy care, sexual activities, and…) who did take the last decision?
24	If you have any child, what its gender?
25	If you have any child, what its age?
26	Are you covered by a healthcare insurance?
27	Does your husband have any other wife?
28	What is the type of your husband's marriage with his other wife?
29	Did you use condom during sexual activities regularly (before infertility)?
	Omitted
30	In your neighborhood, do you know any woman who got pregnant unwillingly?
31	What was their reaction to unwanted pregnancy?
32	Which one of your pregnancy was unwillingly?
33	In your neighborhood, does it happen that girls have sexual activities by force and unwillingly?
34	Have you heard that men have violent behaviors toward women?

SRH: Sexual and reproductive health

According to the experts' opinion, this section was changed with questions about the issues of SRH for example "the time of pregnancy," "decision about the treatment,"

"presence at clinic to achieve ART" and "infertility treatment and decision about the cost and type of treatment" and "the person who makes the last decision." The questions of "Are you pregnant now?" Was changed to "Have you ever been pregnant?" In addition, the questions of "What was the type of your delivery?" and "What was your age at the first pregnancy?" were other examples of the changes [Table 1].

In the qualitative content validity assessment of the questionnaire, 13 questions were deleted. All questions about safe motherhood (prenatal, during labor and delivery and postnatal history) were deleted since the aim of this study was to assess SRH needs of infertile women [Table 2].

Reliability

Infertile women (n = 20) referred to the infertility healthcare center of Imam Hospital in sari in the north of Iran participated in this study. Participation's characteristics are shown in Table 3. At first, the reliability of 8 domains of infertile women's SRH needs calculated separately. These domains consist of 69 question as follow: infertility,[3] safe motherhood,[9] family planning,[8] sexual history,[7] STIs,[9] HIV/ADIS,[11] women's cancer screening,[8] and sexual and gender-based violence.[14] Then one variable was defined as a total score with the sum of 8 domains. The Cronbach's alpha coefficient of total score was reported as 0.945 indicating good reliability. The intra-class correlation coefficient (ICC) of this questionnaire was as 0.895 [Table 4].

DISCUSSION

This study showed that this questionnaire was a valid and reliable instrument for the assessment of sexual and reproductive healthcare needs of infertile women. It had an appropriate Cronbach's alpha coefficient and ICC for all domains. In a study for assessing SRH needs assessment for those with living with HIV, the questionnaire had a kappa coefficient >0.8 for quantitative variables and an average of kappa for qualitative variables >0.9. Since its target group was high-risk people, the domains of this questionnaire was STDs, knowledge about disease transmission from the mother to fetus, tendency to have baby and the needs of persons living with HIV, sexual satisfaction and sexual activities of those people living with sick ones, family and social support, unwanted pregnancy and abortion services, and cervical cancer screening.[21] One

Table 2: Omitted questions in the quantitative content validity phase "content validity index, content validity ratio" of sexual and reproductive health needs questionnaire for infertile women

Question numbers	Questions	CVR score	CVI score
1	Distance between the second, third, and fourth pregnancy	0.6	0.4
2	Which sign can be a dangerous sing in pregnancy?	0.4	0.4
3	Did you get reproductive healthcare services during the current or previous pregnancy?	0.6	0.5
4	Which number pregnancy care did you get during the current or last pregnancy?	0.6	0.4
5	Which month did you get the first pregnancy care?	0.4	0.6
6	If you got any pregnancy care, where did you go to take it?	0.4	0.6
7	If you got pregnancy care, who did your pregnancy care?	0.2	0.6
8	What was the tetanus vaccine condition in the current or last pregnancy?	0.2	0.8
9	What supplement did you take during the current or last pregnancy?	0.2	0.8
10	What was the reason for not referral for receiving pregnancy care?	0.6	0.4
11	Delivery numbers	0.6	0.8
12	Place of the last delivery	0.6	0.8
13	What was the reason for not performing delivery at the hospital?	0.5	0.8
14	Did you have any problem in the last pregnancy, during pregnancy, delivery and after pregnancy?	0.5	0.8
15	If you had any problem, please indicate its time	0.5	0.8
16	Did you get any help for resolving the problem or its consequences?	0.5	0.8
17	If you have any problem during pregnancy and childbirth, and after that, where do you go?	0.5	0.8
18	If in case of referral for resolving the problem, what was the reason for that?	0.5	0.8
19	Did you breastfeed your last children?	0.6	0.8
20	If your answer is negative, what was the reason for not breastfeeding the child in the first 6 months	0.6	0.8
21	Did you refer to the hospital in your last delivery in order to receive delivery care?	0.6	0.8
22	If your answer is negative, what was the reason for not referral nonrecourse to receive postdelivery care after the last pregnancy?	0.6	0.8
23	Do you know any women in your neighborhood that in the last 12 months, that died during pregnancy, childbirth, or few days after that?	0.6	0.4
24	Do you know any women in your neighborhood that got pregnant unwillingly?	0.2	0.3
25	If your answer is positive, what were their reactions to unwanted pregnancies?	0.6	0.5
26	If you take a decision for abortion, where do you go?	0.6	0.6
27	Where do you suggest to a woman whom has problem because of abortion in order to take healthcare services?	0.6	0.6
28	Is it happened in your neighborhood that girls unwillingly and by force had sexual activities?	0.6	0.6
29	From the cases that you heard, which types of men do more violence against women?	0.6	0.6

CVI: Content validity index, CVR: Content validity ratio

Table 3: Demographic characteristics of infertile women participants in the test-retest of the Persian version of the sexual and reproductive health assessment questionnaire in sari, Islamic Republic of Iran (*n*=20)

Variable	Value
Age (years)*	31.35±4.65
Age at marriage*	23.35±5.47
Infertility type (%)**	
Primary	12 (62.5)
Secondary	8 (37.5)
Educational level (%)**	
High school	7 (15)
Secondary high school diploma	27 (70)
Upper secondary high school diploma	6 (15)
Occupational status (%)**	
Housewife	17 (84.6)
Employee	3 (15.4)
Husband's educational level (%)**	
High school	6 (30)
Diploma	12 (60)
Upper diploma	2 (10)

*Mean±SD, **Frequency (%). SD: Standard deviation

Table 4: Reliability assessment for each domain of the Persian version of the infertile women's sexual and reproductive health assessment

Domain	ICC	$CI_{95\%}$	Cronbach's alpha	*P*
Infertility	0.971	0.929-0.989	0.985	0.001
Safe motherhood	0.865	0.691-0.944	0.928	0.001
Family planning	100	100-100	1.000	0.001
Sexual history	0.790	0.544-0.911	0.883	0.001
STIs	0.989	0.973-0.996	0.995	0.001
HIV/AIDS	0.860	0.681-0.942	0.925	0.001
Women's cancer screening	0.942	0.861-0.977	0.970	0.001
Sexual and gender based violence	0.917	0.802-0.966	0.956	0.001
Total	0.895	0.755-0.957	0.945	0.001

ICC: Intra-class correlation coefficient, STIs: Sexually transmitted infections, CI: Confidence interval

study in Iran used the SRH questionnaire and investigated the SRH needs of women attending to healthcare centers in all domains had an ICC upper than 0.5 except in the domain of STDs with an ICC = 0.49.[30] In this study, all domains of this questionnaire had appropriate scores. One probable reason is that the samples of this study were homogenous infertile women. One 2014 study in Iran recruited those women referred to healthcare centers. One study focused on the education needs of men with regard to SRH and reported high correlation and Cronbach's alpha coefficients. The domains of this investigation were reproductive system's cancer, STDs and HIV, and religious perspective toward sexual issues. This study only focused on the educational needs of men.[16] It is also focused on the screening of cancer and STDs and questions about stigma and personal beliefs. The knowledge and awareness of safe motherhood and parental care should be increased among women. The questions related to safe motherhood, deliveries, pregnancies and delivery care were excluded, because the target group in this study was infertile women. Furthermore, one study in 2015 studied the needs of infertile couple's health[23] and collected data regarding the needs of infertile women and other aspects related to it.

One important aspect of SRH is sexual and gender-based violence based on the comments of the WHO. Furthermore, the questionnaire on sexual violence against women was designed in 2014, which was one aspect of SRH.[31] One study in 2015 covered safe motherhood, family planning, sexual history and practices, STIs, HIV/AIDS and sexual and gender-based violence (not infertility), but in this study, infertility and women's common cancer screening were assessed. There are many studies on marital satisfaction and sexual activities,[25,32] However, there are no studies about sexual and reproductive needs of infertile women.

CONCLUSIONS

The Persian version of SRH questionnaire prepared for infertile women is a valid and reliable tool and can be used by healthcare providers for the assessing of infertile women's SRH needs.

Conflicts of interest

There are no conflicts of interest.

Authors' contributions

All authors contributed equally to the writing of the scientific proposal, data collection, and manuscript drafting. The final manuscript was reviewed and approved by all the authors.

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