Research Paper: The Fertility Belief Questionnaire (FBQ)

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ABSTRACT

Objectives: The experience of infertility in Africa is associated with some cultural beliefs that warrant scientific investigations. However, the quantitative exploration of these beliefs has been problematic because of lack of psychometric instruments to measure beliefs about infertility. The purpose of this study was to develop the Fertility Belief Questionnaire (FBQ) based on the constructs of the Common Sense Model (CSM) and examine the content and construct validity of the FBQ.

Materials & Methods: The FBQ was developed based on a revision of an existing revised illness perception questionnaire (Illness Perception Questionnaire-Revised [IPQ-R]). Some items of the IPQ-R were deleted and others were added based on findings of a pilot study, literature review, and suggestions from an expert panel who evaluated the content validity of the FBQ. A Scale Content Validity Index (S-CVI) for each sub-scale of the FBQ was calculated by averaging the I-CVIs for individual items over the total number of expert and lay panel members. To evaluate the construct validity, a confirmatory factor analysis, composite reliability and internal consistency reliability testing were conducted.

Results: The final FBQ is made up of a total of 57 items and six sub-scales with good construct validity. Three sub-scales had reliabilities ranging from 0.71 to 0.80 while two sub-scales had reliabilities less than 0.70.

Conclusion: The FBQ has shown acceptable psychometric properties that will enable the examination of relationships between beliefs and psychosocial health problems of infertility.

1. Introduction

Beliefs are described as mental constructions of experiences that are held to be true and guide behavior [1]. Thus, people form mental pictures out of their experiences which determine the way they think and behave. In an exploration of culture, illness and care, Kleinman and colleagues [2], emphasized that the "dynamic interplay between biologic, psychologic, and socio-cultural factors require that, a new framework for understanding and treating sickness be developed" [2]. Also, illness is culturally constructed,

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and these cultural constructions influence people's expectations and perceptions of the outcome [3]. As a result, the causes, curability, duration, and consequences of illness are all affected by beliefs [2]. There is therefore a need for further research on beliefs and their effects on health related problems.

Infertility is a health problem that is associated with beliefs [4]. However, the quantitative study of beliefs appears to be a problem because there seems to be a scarcity of psychometric instruments for measuring beliefs about infertility. Therefore, there is the need to develop a psychometric instrument with a theoretical background for measuring beliefs about infertility. As a result, the Common Sense Model (CSM) of illness representations was used as an organizing framework for the development of the FBQ.

The Common Sense Model [5, 6] provides a theoretical approach to the understanding of the relationship between illness representations (beliefs), coping, and health outcomes. The CSM proposes that individuals have mental representations of their illness based on concrete and abstract sources of information and the interpretation of this information forms the individual's representations of illness [7]. These representations (beliefs) are developed from various sources of information including the culture, family members, friends, health care providers and personal experiences [8].

The model is made up of three components: representation, coping, and outcomes. Representations are a person's beliefs and perceptions about a health problem [7, 8]. The representation component of the model has five cognitive dimensions: Cause is beliefs about the sources or origin of the health problem. Identity is beliefs about the symptoms that are attached to the health problem. Timeline is beliefs about whether the health problem is acute, chronic, or cyclical. Consequences are the beliefs about the short and long term outcomes of the health problem. Control/cure involves beliefs about a sense of control of the illness and whether the illness is curable or controllable.

The second component of the CSM explains how individuals cope with health problems. The CSM asserts that illness representations, whether medically sound or not, guide coping behaviors [7, 8]. The coping stage entails selecting and executing responses to the information contained in the beliefs [7, 8]. For instance, beliefs about the causes of infertility may guide whether a woman with infertility will seek medical or traditional intervention. If the woman believes that infertility is caused by witchcraft, she may choose to cope by seeking the help of a traditional healer rather than Western medicine.

The third component of the CSM explains the influence of illness representations and coping behaviors on health outcomes [7, 8]. These health outcomes may be both adaptive and maladaptive. Maladaptive health outcomes include poor physical functioning, psychological distress, and disease state, while adaptive outcomes may include good social, psychological, and physical wellbeing [7, 8]. However, the quantitative assessment of the relationship between beliefs and health outcomes is currently problematic because of lack of psychometric instruments. Thus, the purpose of this study was to develop the Fertility Belief Questionnaire based on the constructs of the CSM and examine the content and construct validity of the FBQ.

2. Materials and Methods

The proposal for this study was reviewed and exempted by the Social Science Institutional Review Board of the University of Wisconsin-Madison. The FBQ was developed by revising the Revised Illness Perception Questionnaire (IPQ-R) [9], which was developed based on the CSM. The IPQ-R is a revised version of the Illness Perception Questionnaire (IPQ). The Illness Perception Questionnaire (IPQ) [10] was developed to provide a quantitative assessment of the five components of cognitive representations of illness: consequences, timeline, control/cure, identity, and cause. The IPQ has five subscales with specific number of core items but allows the user to add items for particular patient groups or health threats [10]. The internal consistency reliability scores for the IPQ sub-scales (identity, timeline, consequence, and control/cure) ranged from 0.73 to 0.82. The test-retest reliability over three time periods (1 month, 3 months, and 6 months) ranged from 0.06 to 0.84 for identity, 0.36 to 0.51 for timeline, 0.55 to 0.68 for consequence, and 0.46 to 0.73 for control/cure respectively.

The IPQ was revised into the IPQ-R to include additional subscales to assess timeline cyclical perceptions (beliefs about whether the health problem occurs in cycles), illness coherence (beliefs about how the individual evaluates his/her clear understanding of the illness representation), and emotional representations (beliefs about emotional reactions to the health problem) [9]. The IPQ-R has 70 items with nine sub-scales (identity, cause, timeline chronic/acute, timeline cyclical, consequences, personal control, treatment control, illness coherence, and emotional representations). The test-retest reliabilities of the IPQ-R over a three week period ranged from 0.46 to 0.88, and 0.35 to 0.82 over a period of six months.

High scores on the identity, consequences, and timeline dimensions represent strongly held beliefs about the

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number of symptoms attributed to the illness, the negative consequences of the illness, and either the chronic or cyclical timeline of the condition. High scores on the personal control, treatment control, and illness coherence dimensions represent positive beliefs about the controllability of the illness and a personal understanding of the condition. The cause dimension is analyzed separately by identifying the number and types of causal beliefs.

Development of the FBQ

The IPQ-R was revised in the following ways. The word "illness" in the IPQ-R was replaced with "fertility problem" in the FBQ. Some statements in the IPQ-R that appeared difficult to understand were simplified. New items were added to three subscales (consequence, treatment control, and cause) based on findings of a preliminary study [24] and literature review [11-13] in order to address the cultural appropriateness of the FBQ. Some items with concepts that were difficult to simplify to be culturally appropriate in Ghana ("my personality", "altered immunity" and "pollution in the environment" in the cause subscale of the IPQ-R) were deleted. Two of the original IPQ-R subscales (identity and emotional reaction) were also deleted. The identity subscale was not included in the FBQ because medically, infertility does not have symptoms, although lay persons may believe they experience symptoms caused by infertility. The concern was that including the identity subscale would suggest to participants that symptoms of infertility exist that they did not know about. The emotional sub-scale was deleted for ethical reasons.

Representation of infertility in the FBQ was proposed to have seven subscales: cause, timeline chronic/acute, timeline cyclical, personal control, treatment control, illness coherence, and consequences. Instructions on how to respond to items were provided for each subscale for purposes of content validity evaluation. These revisions were reviewed and critiqued by a research team.

Examining the content validity of FBQ subscales

Sample

Two panels evaluated the preliminary version of the FBQ: an expert and a lay panel. Lynn [14] recommends a minimum of five experts, or three experts in content domain areas of sufficient restriction, such as infertility. The expert panel (N=5) consisted of faculty members and researchers who were known to be experts in quantitative research methods, application of the Common Sense Model in research, experts in women's health, and

experts in instrument development. The lay panel consisted of five Ghanaian women. The inclusion criteria for the lay panel were Ghanaian women aged 18 years or older, who could read and write in English.

Measures

Fertility Belief Questionnaire (FBQ)

Items for six subscales (timeline chronic/acute, timeline cyclical, illness coherence, personal control, treatment control, and consequences) were rated on a six point scale from strongly disagree (0) to strongly agree (5). The causes were rated on a three point scale: yes (2), not sure/don't know (1), and no (0). High scores on the timeline chronic/acute, timeline cyclical, and consequences sub-scales represented strongly held beliefs about the chronicity, cyclical nature of infertility, and the negative consequences of infertility. High scores on the personal control, treatment control, and illness coherence subscales represented positive beliefs about the controllability of infertility and a poor personal understanding of infertility.

Content Evaluation Instrument (CEI)/Item Rating Scale (IRS)

Two versions of CEI, CEI-Expert and CEI-Lay were developed for the expert and lay panels to rate if each item of the FBQ was content valid [14-16]. The expert panel used the CEI-Expert to evaluate the extent to which each item is representative of each subscale of the FBQ. Each member was instructed to rate the representativeness of each item: that is, if the item is appropriate for the dimension, using a 3-point ordinal scale, from delete (1), item needs revision (2), to item is representative (3). They were also asked to rate the clarity of each item and the comprehensiveness of the entire instrument. Clarity of each item was rated as either: Item needs revision to be clear (1) or Item is clear (2). Furthermore, members were asked to suggest ways to make the items clearer. Members were instructed to rate the comprehensiveness of the entire instrument, by indicating yes or no, and to suggest adding or deleting items to improve the comprehensiveness of the instrument.

The lay panel used the CEI-lay to rate items in the FBQ. Participants were asked to rate the level of importance of each item in the FBQ on a 3-point ordinal scale from, not important (1), important (2), to extremely important (3). Members were asked to rate the clarity of each item as either item needs revision to be clear (1) or item is clear (2). Also, members were

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instructed to rate the comprehensiveness of the entire instrument, by indicating yes or no, and to suggest adding items to improve the comprehensiveness of the instrument. Members were also asked to rate the entire instrument as: instrument is not culturally appropriate (0) or instrument is culturally appropriate (1).

To recruit expert panel members, packages containing a cover letter, an item rating scale, and a self-addressed and stamped envelope were mailed to each identified expert. The letter explained the purpose of the study, the reason the expert was chosen, described the instrument and its scoring, and explained the item rating scale. Experts who were willing to participate rated the FBQ using the item rating scale, and mailed it back to the researcher.

To recruit lay panel members, the researcher attended one of the monthly meetings of a Ghanaian women association to explain the purpose of the study and sought permission to recruit. The study information was distributed to the women, and they were told to contact the researcher after the meeting if they were willing to participate. Those who were willing to participate contacted the researcher after the meeting and provided their mailing addresses. Participants received packets by mail, containing a cover letter, the item rating scale or CEI-Lay, self-addressed stamped return envelope and written instructions on how to rate the items. Participants rated each item of the FBQ using the item rating scale. Then, the completed item rating scales were mailed back to the researcher.

Data analysis

To make decisions about the items, Item level Content Validity (I-CVI) scores were computed to determine which items should be retained, using the representativeness/clarity ratings from the experts and importance/clarity ratings from the lay panel [14-16]. I-CVI scores were computed separately for the expert and lay panel ratings. The I-CVI of each item was determined by the number of experts/lay members who rated the items as 3 divided by the total number of members [16]. Items rated as 3 on representativeness and importance and 2 on clarity by the majority of panel members were retained. The Scale Content Validity Index (S-CVI) for each sub-scale of the instrument was calculated by averaging the I-CVIs for individual items over the total number of expert and lay panel members [16]. A S-CVI of .80 is accepted to be a good criterion for new measures [17].

Content validity results of FBQ subscales

Item Content Validity Index (I-CVI): A total of 60 items comprising seven subscales of the FBQ were evaluated by the expert and lay panels. The I-CVI ratings and clarity were described separately for each subscale for representativeness and importance for each item of the FBQ. The I-CVI ratings for each sub-scale are described below.

Timeline chronic/acute subscale: Six items were evaluated by both panels. The I-CVI scores for representativeness ranged from .80 to 1.00. The I-CVI scores for level of importance of each item ranged from .20 to 1.00. Three items scored below .60 for importance, and were all deleted.

Timeline cyclical: Four items were evaluated by both panels. The I-CVI scores ranged from 0.4 to 0.8 for representativeness and 0.2 to 0.8 for level of importance. However, the whole of the timeline cyclical subscale was rated by both panels as not clear. The reason given by the experts was that the items for the timeline cyclical subscale were not relevant to infertility. For this reason, this subscale was deleted.

Consequence subscale: All eleven items had the acceptable I-CVI scores for representativeness and importance. For representativeness, six items scored 1.0, four items scored 0.8, and one item scored 0.6. For level of importance, one item scored 1.0, eight items scored 0.8, and two items scored 0.6. However, ten items were rated as not clear by both panels. Minor revisions were made to these items for clarity and retained based on suggestions from both the lay and expert members.

Illness coherence subscale: All five items scored I-CVIs of 0.8 for representativeness but had varied scores for level of importance. Two items scored 1.0 and one item each for the scores of 0.8, 0.6, and 0.4. The only item that scored low for importance (0.4) was revised and retained based on panel members suggestions. All five items were retained for this subscale. Four items which were rated as not clear were minimally revised by re-wording the items and retained as recommended by the expert panel members.

Personal control subscale: All six items in this subscale had the acceptable I-CVI scores for representativeness and level of importance. Three items scored 1.0, and three items scored 0.8 for representativeness. For level of importance, 1 item scored 1.0, three items scored 0.8 and two items scored 0.6. Two items were rated as not clear by both panels and were re-worded for clarity and retained.

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Treatment control subscale: Eight items were evaluated by both panels. The I-CVI scores ranged from 0.6 to 1 for representativeness and level of importance. However, two items that were reported by the experts to be vague and confusing were dropped. A total of six items were retained for this subscale.

Cause subscale: The cause subscale consisted of 20 items that were rated by the expert and lay panels. All items were rated as 3 for representativeness by the expert panel. The I-CVI score for 19 of 20 items was 1.0, while one item had an I-CVI score of 0.8. For ratings of importance by the lay panel, the I-CVI scores varied: 5 items scored 1.0, 7 items had an I-CVI score of 0.8, 5 items scored .6, 2 items scored .4, and only 1 item scored .2. A total of 3 items scored below 0.6. Those three items with low importance ratings by the lay panel were rated high for representativeness by the expert panel. For this reason, those 3 items were minimally revised and retained. One item ("My own behavior") was dropped because both panels thought it was vague and confusing. Eight new items ("over weight", "under weight", "poor diet", "high blood pressure", "irregular menses", "thyroid problems", "diabetes", and "husband's infertility") were suggested for addition by the expert panel and were added. Seventeen items were rated as not clear by both panels. These items were reworded for clarity and retained based on suggestions of the expert panel members.

Scale Content Validity Index Scores(S-CVI) for Representativeness/Importance: The S-CVI scores were calculated before and after revisions. The average S-CVI scores for each subscale by both panels before revision ranged from 0.76 to 0.86. After revisions, the average S-CVI scores for each subscale by both panel ranged from 0.76 to 0.90.

In summary, a total of 49 items and six subscales were retained as content valid for the FBQ. The expert panel suggested eight additional items for the cause subscale. Four out of five experts rated the FBQ as comprehensive, and all five lay panel members rated it as comprehensive and culturally appropriate. The final FBQ comprised of 57 items and six subscales: timeline (3 items), consequences (11 items), illness coherence (5 items), personal control (5 items), treatment control (6 items), and cause (27 items). See appendix A for the FBQ.

Examining the construct validity of the FBQ subscales

Design

The study was a descriptive cross-sectional survey.

Sample size estimation

For confirmatory factor analysis, a total sample size of 200 is generally considered acceptable [18, 19]. Therefore, recruitment was aimed at a total sample size of 200 women with infertility. However, a total of 203 participants filled out the FBQ to enable the testing of the construct validity of the FBQ. Women who were 18 years or older, could read and write in English, and were contacting the gynecology units of two public hospitals in Ghana for infertility services were eligible for the study. Women who were contacting the gynecology units of the two hospitals for other gynecological services rather than infertility were excluded.

Measure

The only measure was the FBQ which has been described above

Data analysis

To examine the construct validity of the FBQ, a confirmatory factor analysis was performed. Because the FBQ was modified from an existing scale (IPQ-R) with confirmed dimensional structures, exploratory factor analysis to determine the factor structure of the FBQ was not conducted. In order to determine the factor correlations, which makes the results more interpretable, oblique rotation was chosen. A total of 30 items with 5 dimensions (timeline chronic/acute, consequence, illness coherence, personal control, and treatment control) of the FBQ were included in the CFA. The cause dimension was not included because the dimension was meant to describe categories of beliefs only. Therefore, a five factor model of representations of infertility was specified. These were timeline chronic/acute (3 items), consequence (11 items), illness coherence (5 items), personal control (5 items), and treatment control (6 items).

Construct validity is the extent to which the instrument measures a theoretical construct [16]. To test for construct validity, Mplus version 6.1 [18] was used to conduct Confirmatory Factor Analysis (CFA). Two types of reliability coefficients were computed: composite reliability [20, 21] and internal consistency reliability (Cronbach's alpha). Brown psychometric program, version 1 was used to compute the composite reliability for each subscale of the FBQ. Then, SPSS version 18 was used to compute internal consistency reliabilities (Cronbach's alpha) for the FBQ subscales.

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Construct validity results of FBQ subscales

Factor loading

The factor loadings ranged from small (0.12) to large (0.93). With the exception of two items (item 3 for consequence and item 6 for treatment control), all the factor loadings were significant. Items with low factor loadings were not deleted until after the reliability was tested. Therefore, these items were retained until reliability testing and item-analyses were performed to determine whether any items should be deleted.

Relationship between factors

The correlations among factors were examined. The correlations were all positive and ranged from small (0.19) to moderate (0.62). Only the correlation between factor 4 (personal control) and factor 2 (consequence) was not statistically significant (P>0.05). A psychometric program was used to assess the Average Variance Extracted (AVE) by each factor of the FBQ. The AVE is defined as the amount of variance that is explained by each factor, in relation to the amount of variance due to measurement error [22]. To calculate the AVE for each factor of the FBQ, the number of items in each factor, the item residuals or error variances, and the variance estimate for the factor obtained from a non- standardized CFA were entered into the psychometric programme.

Reliability of FBQ subscales

After the construct validity was examined, two types of reliability coefficients were calculated: composite reliability and internal consistency reliability. Composite reliability is a measure of the overall reliability of a construct [23]. Because internal consistency reliability (Cronbach's alpha) can either under estimate or overestimate the reliability of a measure [23], a decision was made to compute both composite reliability and internal consistency reliability for all the FBQ subscales involved in the CFA. The results showed that three sub-scales (consequence, Illness coherence and personal control) had reliabilities ranging from 0.71 to 0.80 while two sub-scales (timeline chronic/acute and treatment control) had reliabilities less than 0.70 subscales. The values for average variance extracted ranged from 0.22 to 0.48, while values for the composite variance estimated ranged from 0.73 to 2.42.

3. Results

Because this is a scale development paper that examined two main components of the scale (FBQ), the re-

sults had to be presented according to the components. The two components are;

1. Examining the content validity of FBQ subscales

2. Examining the construct validity of the FBQ subscales

For the sake of clarity, the results are presented in the two sections

1. Content validity results of FBQ subscales

2. Construct validity results of FBQ subscales

Therefore, there should not be another section for results. If we put the results of the two components together, the clarity may be lost. I hope this will be acceptable.

4. Discussion

Leventhal and colleagues [6] proposed that the illness representation component of the Common Sense Model (CSM) has five dimensions: identity, cause, timeline, consequence, and cure/controllability. In this study, there is some evidence that the FBQ measures these dimensions of the CSM. The women did have representations or beliefs about their fertility problems. They had beliefs about timeline, consequence, illness coherence, personal control, treatment control and cause, as predicted by the CSM.

Evaluation of the construct validity of the FBQ provided some evidence for the validity and reliability of the FBQ subscales. There was reasonable evidence that five dimensions of beliefs about infertility based on the CSM (timeline chronic/acute, consequences, illness coherence, personal control, and treatment control) were measured by the FBQ. The cause dimension was not included in the CFA because this dimension is only used to describe different perceived causes.

Two methods of reliability were used to evaluate the reliability of the FBQ subscales: composite reliability and internal consistency reliability. Three subscales (consequence, illness coherence, and personal control) had acceptable levels of reliability. The composite reliability results showed that two out of the five FBQ subscales were not reliable. Each of these unreliable subscales (timeline chronic/acute and treatment control) scored a composite reliability below 0.7. This suggests that the timeline and treatment control constructs either are not meaningful dimensions of beliefs related to infertility or that the items did not capture the women's beliefs about these con-

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structs. There was very little variability in the responses provided for the items of the two unreliable subscales, and this might have contributed to the low composite reliability scores for timeline and treatment control.

The lack of variability in the responses may also be due to cultural beliefs that result in a socially desirable response pattern for Ghanaian women. For instance, one of the three items for timeline chronic/acute stated that "my fertility problem is likely to be permanent". In a society where the culture requires every woman to be fertile and women are socialized to believe that childbearing is the main function of a woman, it may not be acceptable for a woman to agree that her fertility problem is likely to be permanent. Additionally, if a woman agrees that her fertility problem is likely to be permanent, because of cultural beliefs about marriage and infertility, it may suggest that the woman either caused her infertility or knows what caused it. Thus, these cultural beliefs may have influenced the responses for the timeline dimension. Similarly, if a woman states that she believes that no treatment can control her infertility, it might imply that she knows why she is infertile.

In order to abide by the cultural norm of every Ghanaian woman desiring to bear children, women with fertility problems may believe and agree that their fertility problems are treatable. It may be that the concepts of timeline and treatment control may not work well for infertility in Ghana because of the cultural beliefs and norms, and this may have contributed to the low reliabilities of the timeline and treatment control subscales of the FBQ.

Other partial support for the construct validity of the FBQ is suggested by the relationships among the subscales of the FBQ. In a meta-analysis of studies (N=45) that used the CSM, Hagger and Orbell [7] found some consistent support for relationships between the dimensions. For instance, it was found that the control dimension was inversely related to the chronic timeline and consequence dimensions. In this research similar results were found. Correlations among the three reliable subscales indicated that there were small to moderate significant correlations between the subscales. The personal control dimension was inversely related to consequence and illness coherence.

5. Conclusion

As a result of the lack of psychometric instruments, quantitative studies that examine beliefs about infertility in Africa are lacking in the literature. Without reliable measures of beliefs about infertility, examination of the relationship between beliefs and psychosocial health problems will continue to be problematic. This explains why reports on the relationship between beliefs and psychosocial health problems are lacking in the literature. It is against this background that the FBQ was developed based on a revision of the IPQ-R. The FBQ has shown acceptable psychometric properties that will enable the examination of relationships between beliefs and psychosocial health problems of women with infertility.

Acknowledgments

Conflict of Interest

The authors declared no conflicts of interest.

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Appendix A: The Fertility Belief Questionnaire (FBQ)

ID: .... Date:.............................. Site:................................

We are interested in your own personal views of how you now see your fertility problem. Please indicate how much you agree or disagree with the following statements about your fertility problem by ticking the appropriate box.

Views About Your Fertility Problem (Timeline: Chronic/Acute)		Agree			Disagree		
		Strongly Agree	**Moderately Agree**	**Slightly Agree**	**Moderately Disagree**	**Slightly Disagree**	**Strongly Disagree**
IP1	My fertility problem will last a short time	5	4	3	2	1	0
IP2	My fertility problem is likely to be permanent	5	4	3	2	1	0
IP3	My fertility problem will improve in time	5	4	3	2	1	0

Views About Your Fertility Problem (Consequences)		Agree			Disagree		
IP4	**My fertility problem is a serious condition**	**Strongly Agree**	**Moderately Agree**	**Slightly Agree**	**Moderately Disagree**	**Slightly Disagree**	**Strongly Disagree**
IP5	My fertility problem has major consequences on my life	5	4	3	2	1	0
IP6	My fertility problem does not have much effect on my life	5	4	3	2	1	0
IP7	My fertility problem strongly affects the way others see me	5	4	3	2	1	0
IP8	My fertility problem has serious financial consequences	5	4	3	2	1	0
IP9	My fertility problem causes difficulties for those who are close to me	5	4	3	2	1	0
IP10	I can be divorced because of my fertility problem	5	4	3	2	1	0
IP11	My fertility problem makes me feel incomplete	5	4	3	2	1	0
IP12	I don't interact with other people's children because of my fertility problem	5	4	3	2	1	0
IP13	It is difficult for me to interact with people in my community because my fertility problem	5	4	3	2	1	0
IP14	My fertility problem makes me have problems with my in-laws	5	4	3	2	1	0

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	Illness Coherence	Strongly Agree	Moderately Agree	Slightly Agree	Moderately Disagree	Slightly Disagree	Strongly Disagree
IP15	My fertility problem is confusing to me	5	4	3	2	1	0
IP16	My fertility problem is surprising to me	5	4	3	2	1	0
IP17	I don't understand my fertility problem	5	4	3	2	1	0
IP18	My fertility problem doesn't make any sense to me	5	4	3	2	1	0
IP19	I have a clear picture or understanding of my fertility problem	5	4	3	2	1	0

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We are interested in your own personal views about your fertility problem and what you can do about it. Please indicate your agreement or disagreement by ticking the appropriate box.

	Personal Control	Agree			Disagree		
		Strongly Agree	Moderately Agree	Slightly Agree	Moderately Disagree	Slightly Disagree	Strongly Disagree
IP20	There are many things I can do to control my fertility problem	5	4	3	2	1	0
IP21	What I do can determine whether my fertility problem gets better or worse	5	4	3	2	1	0
IP22	The outcome of my fertility problem depends on me	5	4	3	2	1	0
IP23	Nothing I do will affect my fertility problem	5	4	3	2	1	0
IP24	My actions will have no effect on the outcome of my fertility problem	5	4	3	2	1	0
	TREATMENT CONTROL	5	4	3	2	1	0
IP25	The use of herbs can treat my fertility problem	5	4	3	2	1	0
IP26	I use prayer as a means to solve/cure my fertility problem	5	4	3	2	1	0
IP27	I combine prayers with herbs and hospital treatment to solve my fertility problem	5	4	3	2	1	0
IP28	There is very little that can be done to improve my fertility problem	5	4	3	2	1	0
IP29	Hospital treatment will be effective in curing my fertility problem	5	4	3	2	1	0
IP30	There is nothing that can help my fertility problem	5	4	3	2	1	0

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Causes of fertility problems: We are interested in your opinions about the causes of fertility problems. We are most interested in your own views rather than what others including doctors or family may have suggested to you. Please indicate yes, not sure/don't know, or no by ticking the appropriate box.

	Possible Causes	Yes	Not Sure/Don't Know	No
C1	Stress			
C2	Hereditary - it runs in my family			
C3	Sexually transmitted diseases, for example gonorrhea			
C4	Bad luck			
C5	Poor medical care in the past			
C6	Thinking negatively about life			
C7	Worrying about family problems			
C8	A person's emotional state, for example feeling down, lonely, anxious, empty			
C9	Getting old			
C10	Drinking alcohol			
C11	Smoking			
C12	Accident or injury			
C13	Past sexual behavior			
C14	Witchcraft			
C15	Failure of husband to pay bride price			
C16	Use of family planning pills			
C17	Punishment from God			
C18	A curse from ancestors			
C19	Husband's refusal to see a doctor			
C20	Over weight			
C21	Underweight			
C22	Poor diet			
C23	High blood pressure			
C24	Irregular menses			
C25	Thyroid problems			
C26	Diabetes			
C27	Husband's infertility			

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