Evaluating Reliability of Theory of Planned Behaviour Questionnaire for Withdrawal of Divorce Petition

Nahid Ardian1, Seyed AliReza Afshani2, Mohammad Ali Morowatisharifabad3, Seyed Saeed Mazloomy Mahmoodabadi4, Ali Akbar Vaezi5, Seyed Ali Asghar Refahi6, Mohsen Askarshahi7, Masoud Hadjizadehmeimandi8, Hassan Zareei Mahmoodabadi8

1 Social Determinants of Health Research Center, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran; 2 Faculty of Social Sciences, Yazd University, Yazd, Iran; 3 School of Nursing & Midwifery, Research Center for Nursing & Midwifery Care in Family Health, Shahid Sadoughi University of Medical Science, Yazd, Iran; 4 Department of Social & Prevent Crime, Yazd, Iran; 5 Department of Biostatistics and Epidemiology, Shahid Sadoughi University of Medical Science, Yazd, Iran; 6 Department of Psychology, Yazd University, Yazd, Iran

Abstract

BACKGROUND: Given the increased rate of divorce, it is important to analyse the characteristics of divorce applicants. The theory of planned behaviour (TPB) can provide a suitable framework to predict, explain, and change the behaviours. In Iran, no instrument can be found, based on health education models, to investigate divorce petition filing as a behaviour.

AIM: This study was conducted to design a questionnaire on withdrawal of divorce petition based on the TPB and estimate its validity and reliability.

MATERIAL AND METHODS: A qualitative study was conducted in 27 participants involved in the divorce process using directed content analysis. The face and content validity of 58 items, drawn from the qualitative study, were evaluated by 10 experts. The reliability was estimated using Cronbach’s alpha coefficient. The SPSS version 16 was used to analyse data.

RESULTS: Estimates of the face and content validity (quantitative and qualitative), revealed that of the 58 items, 48 were valid based on four of the constructs of the TPB. Cronbach’s alpha coefficient was also derived greater than 0.6.

CONCLUSION: The designed questionnaire, whose validity and reliability was confirmed in this study, can be used in similar studies. However, the social and cultural differences and their related effects should be considered.

Introduction

Divorce is one of the problems that impose stupendous costs on both the community and individuals [1]. Researchers have suggested several factors as causes of divorce such as marital dissatisfaction, extreme differences in beliefs, personality differences, cultural differences, financial problems, addiction, betrayal, lack of attention to gender identity and sexual orientation, and couples’ families differences and meddling [2] [3].

Despite the increased rate of divorce across the globe, certain exceptions have been observed in different societies over time, such as decreased divorce rate and increased marriage length in some countries [4]. To solve couples’ problems and reduce the divorce rate, different approaches have been proposed including education and counselling as well as qualitative and quantitative studies [5]. One approach is to investigate social problems is the use of models and theories of health education that can help provide effective communicative strategies to use suitable strategies and theories [6]. Fishbein and Ajzen’s theory is based on two presumptions; according to the first one, people make decisions based on their logic and reasonable analysis of available data and the second one states that they consider the consequences of their behavior, Fishbein and Ajzen’s theory of planned behavior (TPB) has been used to resolve different social and personal problems [7]. It seems reasonable to select the TPB
and its constructs to analyse behavioural intention of couples to withdraw divorce petition because the withdrawal of divorce is a behavior. The first factor affecting behavioral intention is attitude resulting from positive and negative beliefs about performing a behavior (divorce). Other factor is subjective norms which refer to the influence of the other people who are important to the individual, such as parents, family members, and relatives. The perceived behavioral control refers to one’s beliefs regarding personal control over the performance of the behavior and one’s belief in their own ability to succeed in performing the behaviour [8]. The perceived behavioral control may be improved by education and skill training, which affects the behavioral intention and behavior change (withdrawal of divorce petition).

To conduct a more comprehensive study and design an appropriate measuring questionnaire, it is recommended to use qualitative methods and obtain a correct perception of experiences [9] [10]. The scales of the TPB should be prepared by a pilot study to ensure the psychometric properties [11]. Despite the need for a valid questionnaire based on the TPB, no study has yet been conducted in Iran to investigate the validity of such a questionnaire.

Because the validity and reliability are affected by changes in the society, the present study sought to design a questionnaire using the results of a qualitative study, leading to a better understanding of withdrawal of divorce. This study is part of a larger study on the use of the TPB in the withdrawal of divorce petition.

Methods

Necessary data were collected in a qualitative study using directed content analysis based on the TPB to design an efficient questionnaire. The study population of the qualitative study included 27 people, 10 of whom were couples who had been referred to the Family Counseling Center, seven were family members of the couples, four were counselors, three were social workers of the Family Counseling Center, and three were Judges and their advisors in the Family Court of the Judicature. The participants were selected by purposive sampling. The only inclusion criterion was providing consent to be interviewed and to collaborate with the study. The exclusion criterion was withdrawing from the interview. Table 1 shows the demographic characteristics of participants. (The qualitative section of the study is going to be published)

In interviewing different groups of samples during the qualitative study, items on the constructs of the TPB or those of the questionnaire were extracted. The pilot questionnaire included 58 items classified as follows: 16 on attitude, 24 on perceived behavioural control, 10 on subjective norms, and 8 on intention). The items were rated on a 5-point Likert scale (from Absolutely agree = 5 to Absolutely disagree = 1), to evaluate the validity, including face and content validity.

Validity refers to the extent of covering the concept a test aims to measure. There are various methods to estimate validity which determine the relationship between a concept (variable) and operative indices selected to measure it. The fundamental methods to evaluate validity are faced validity and content validity. Qualitative face validity indicates whether a questionnaire is appropriate to the study purpose and content area, based on respondents’ viewpoints [12]. Participants were first asked to estimate the face validity.

Item clarity: Item clarity addresses the question of how much a test is valid based on respondents’ opinions? The pilot questionnaire was filled out by 21 individuals referring to the Family Counseling Center who did not participate in the main study.

After the pilot study, participants were asked to identify any item that was difficult to understand or confusing, express their viewpoints regarding the appropriateness of phrases concerning the questionnaire dimensions, and identify ambiguous items. In the next step, certain items were revised or deleted, or some items were added.

To determine the importance of each item, the item impact method was used. For this purpose, 21 respondents were asked to evaluate the importance of items using a 5-point Likert scale (from 1 to 5):

\[ \text{Impact score} = \text{Frequency} \times \text{importance} \]

Item score indicates the score derived by the item impact method; frequency refers to the percentage of respondents attaining a score of 4 or 5, and importance refers to the average score of the item based on the Likert scale. According to the above formula, those items that attain an item impact score of 1.5 or more remained. According to results, no item was deleted in this step.

The pilot questionnaire was assessed by 10 experts including six university teachers of health education, two university teachers of sociology, and two university teachers of epidemiology. They were asked to examine the questionnaire for grammatical structure, vocabulary, phrases, scoring, and necessity of items, and to see whether it is necessary to add further items. The structure and wording of some items were changed according to experts’ comments. Also, the theme of some items was changed, e.g. three items under the intention theme were transferred to the theme of behavioural control.

To determine the CVR, the experts (10 experts participating in the previous part) were asked
to judge the necessity and usefulness of all items. The formula used by the experts to calculate the CVR was as follows: CVR = (n−Ne)/Ne).

Where N represents the number of experts judging the items as necessary, and Ne represents the number of evaluators. The CVR greater than .62 was confirmed by Lawshe’s table. Items were confirmed or rejected according to the protocol as follows:

If the item CVR were equal or higher than .62, the item would be confirmed; if the CVR was between 0 to 0.62 and the impact ratio was higher than 1.5, the item would be confirmed; if the CVR was less than 0 and the impact ratio was higher than 1.5, the item would be rejected. At the end of this step, 6 items were deleted, and 51 remained. Table 2 shows the CVR scores, numerical means for judgments, and acceptance or rejection of each item.

CVI, which showed the generalizability of judgments made by the 10 experts, indicated the validity of the applicability of the final version of the questionnaire: Simplicity and understandability: 1. The item is not clear; 2. The item is relatively clear; 3. The item is clear; 4. The item is highly simple. Clarity: 1. The item is not clear; 2. The item is relatively clear; 3. The item is clear; 4. The item is fully relevant. Clarity: 1. The item is not clear; 2. The item is relatively clear; 3. The item is clear; 4. The item is highly clear.

CVI was estimated by the formula below:

CVI = n/Ne ≥ 0.79

The CVI was calculated as the sum of scores 3 and 4 divided into the total number of scores. Items with CVI more than .79 were accepted, items with CVI between 70% to 79% were considered vulnerable and to need revision, items with CVI less than 70% were not considered acceptable and therefore deleted. The content validity of the questionnaire was confirmed if the CVI scores were acceptable.

By using reliable instruments, we can obtain more dependable results and also similar conclusion if we replicate the study. To estimate reliability, the Cronbach’s alpha coefficient was used. Concerning similar studies, the least number of samples to conduct a pilot test to estimate Cronbach’s alpha coefficient is 20. The pilot questionnaire was filled out by 21 samples. Because the literacy levels were different in this phase, the interviewer asked the questions and filled out the questionnaire. According to the results, internal reliability was determined by Cronbach’s alpha coefficient.

Results

Table 1 shows Personal Characteristics of participants of the qualitative study.

| Acceptance | Number of N (N=52) Attitude to the qualitative study |
|------------|-----------------------------------------------------|
| Accepted   | 10                                                  |
| Accepted   | 9                                                   |
| Accepted   | 9                                                   |
| Accepted   | 8                                                   |
| Accepted   | 8                                                   |
| Accepted   | 8                                                   |
| Accepted   | 8                                                   |
| Accepted   | 8                                                   |
| Rejected   | 7                                                   |
| Rejected   | 7                                                   |
| Rejected   | 6                                                   |
| Rejected   | 6                                                   |
| Rejected   | 6                                                   |
| Rejected   | 6                                                   |
| Rejected   | 5                                                   |
| Rejected   | 5                                                   |
| Rejected   | 5                                                   |
| Rejected   | 5                                                   |
| Rejected   | 4                                                   |
| Rejected   | 4                                                   |
| Rejected   | 4                                                   |
| Rejected   | 3                                                   |
| Rejected   | 3                                                   |
| Rejected   | 2                                                   |

Of the 52 items, 48 were selected. CVR for each item was estimated (Table 2). Table 2: CVR scores, the numerical mean of judges, acceptance of items.
Content validity was confirmed by an estimated CVI of 0.79 according to the above formula.

Table 3 shows the Cronbach’s alpha coefficients of the constructs. If the alpha coefficients were equal or higher than 0.6, it was considered appropriate. In this step, three items (Items 2, 8, and 10 of subjective norms) were deleted. Finally, 48 items were selected.

Table 3: reliability of items according to constructs

| Consistency | Number of Items | Themes of questionnaire |
|-------------|----------------|-------------------------|
| 0.73        | 14             | Attitude                |
| 0.84        | 21             | Perceived behaviour control |
| 0.63        | 7              | Subjective norms        |
| 0.91        | 6              | Intention               |

Discussion

Increased rate of divorce petition filing is a social problem that has forced certain organisations such as the Judicature and Welfare Organization to attempt to reduce. As with some studies, the current study is also theory-based [13] [14]. Although some studies on the questionnaire of marital or family satisfaction have been done in Iran [15] [16] [17] no study has yet been conducted on withdrawal of divorce based on health education models, especially the TPB. This study sought to develop an instrument on withdrawal of divorce petition based on the TPB and to estimate its validity and reliability. To determine the content validity, the designed questionnaire was evaluated by 10 experts of health sciences, sociology, and counselling. However, in the simple cases, fewer experts are involved [18] [19]. Because of the complexity of divorce as a social phenomenon, 10 experts were involved. The expert panel and their different viewpoints, due to differences in their fields of study, made it possible to use their viewpoints in evaluating the qualitative content of the questionnaire. It is noteworthy that this study data were collected in a qualitative study including primary interviews, encoding, and directed content analysis.

Moreover, codes were drawn by interviewing different groups of people involving in divorce, and different experts participated in the evaluation and estimation of the instrument’s face and qualitative content validity. In previous studies, fewer experts were involved in validity evaluation [15] [16] [17]. In the studies on marriage satisfaction, CVR and CVI were not taken into account. The present study was first to use these methods to determine people’s status, including aspects of attitude, perceived behavioural control, subjective norms, and divorce intention and divorce withdrawal.

The results showed that the designed questionnaire was relatively reliable. Reliability refers to the consistency and coincidence within the constructs of an instrument [20]. In a study conducted in 5 countries, the internal consistency of the TPB was obtained from 0.52 to 0.89 [21] [22]. The results showed that three constructs were significantly reliable, but under the theme of subjective norms, the estimated alpha was 0.63. Although this alpha coefficient represents reliability, it can also be interpreted that probably in different social and cultural contexts, the factors affecting people’s subjectivity and decision making are also different and effectiveness of other factors on subjectivity is more apparent.

To evaluate the face validity, people dealing with divorce were asked to fill out the questionnaire in two sections: First, items on four constructs of the TPB; second, 35 items on demographic characteristics. Then, they were asked to detect the inappropriate items. They were also asked to mention the items that seem ambiguous and unnecessary and to introduce new items that they felt they are necessary. To evaluate face validity, quantitative method of impact score was used, as with many other studies [23].

Having reviewed the literature on validity and reliability extensively, we found no questionnaire on divorce and divorce withdrawal. As a limitation of this study was purposive convenience sampling. To obtain better measures of validity and reliability, random sampling can be used. Also, construct validity not estimated because the qualitative method was applied and a limited number of samples participated. In additional studies, more samples should be enrolled to measure this type of validity. Because of drawing items via qualitative interviews and use of personal experiences, some items were deleted after various steps of reliability and validity measurement.

In conclusion, our results showed that the questionnaire drawn by the qualitative method and directed content analysis based on the TPB is relatively valid and reliable. It is a suitable tool to evaluate behavioural intention and may be used to explain divorce behaviour, considering social and cultural differences.

References

1. Bray JH, Jouriles EN. Treatment of marital conflict and prevention of divorce. Journal of Marital and Family Therapy. 1995; 21(4):461-73. https://doi.org/10.1111/j.1752-0606.1995.tb00175.x
2. Hoseini F, Rezapour M. The Study of Effective Factors in Increasing Divorce Rate (Case Study: Divorced Couples of Sarpolezahab Town). Quarterly Journal of Social Work. 2015; 4(2):33-41.
3. Barikani A, Ebrahim SM, Navid M. The cause of divorce among men and women referred to marriage and legal office in Qazvin, Iran. Global journal of health science. 2012; 4(5):184. https://doi.org/10.5539/gjhs.v4n5p184 PMid:22980391
1. Brown SL, Lin IF. The gray divorce revolution: Rising divorce among middle-aged and older adults, 1990–2010. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences. 2012; 67(8):731–41. https://doi.org/10.1093/geronb/gbs089 PMid:23052366

2. Almeida MDV, Wind M, et al. Reliability and validity of a questionnaire to measure personal, social and environmental correlates of fruit and vegetable intake in 10–11-year-old children in five European countries. Public health nutrition. 2005; 8(2):189-200. https://doi.org/10.1016/j.chb.2008.06.002

3. De Bourdeaudhuij I, Klepp KI, Due P, Rodrigo CP, De Almeida MDV, Wind M, et al. Reliability and validity of a questionnaire to measure personal, social and environmental correlates of fruit and vegetable intake in 10–11-year-old children in five European countries. Public health nutrition. 2005; 8(2):189-200. https://doi.org/10.1016/j.chb.2008.06.002

4. Kovač VB, Riste J, Moan IS. From intentions to quit to the actual quitting process: The case of smoking behavior in light of the TPB. Journal of Applied Biobehavioral Research. 2009; 14(4):181-97. https://doi.org/10.1111/j.1751-9861.2010.00048.x

5. Gofafshani N. Understanding reliability and validity in qualitative research. The qualitative report. 2003; 12(4):181-97. https://doi.org/10.1111/j.1751-9861.2010.00048.x

6. Mahmoudabad SSM, Ardian M, Karimi M. General health of foreign-origin groups and native population. Global journal of health science. 2014; 6(5):55. https://doi.org/10.5539/gjhs.v6n5p55 PMid:25168986

7. Roy S, Chakraborty S, De V, et al. Development and psychometric properties of a belief-based Physical Activity Questionnaire for Diabetic Patients (PAQ-DP). BMC medical research methodology. 2010; 10(1):104. https://doi.org/10.1186/1471-2288-10-104 PMid:21062466 PMcid:PMC2999522

8. Alidousti AA, Nakhaee N, Khanjani N. Reliability and validity of the Persian versions of the ENRICH marital satisfaction (brief version) and Kansas Marital Satisfaction Scales. Journal of Health and Development. 2015; 4(2):158-67.

9. Khailifehlo SF, Aghaghalazadeh F. The manner of social actor's representation in divorce demanding women's discourse based on Van leewen (2008): forensic linguistics approach. Language Related Research. 2017; 8(4):1-21.

10. Brown SL, Lin IF. The gray divorce revolution: Rising divorce among middle-aged and older adults, 1990–2010. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences. 2012; 67(8):731–41. https://doi.org/10.1093/geronb/gbs089 PMid:23052366

11. Alidousti AA, Nakhaee N, Khanjani N. Reliability and validity of the Persian versions of the ENRICH marital satisfaction (brief version) and Kansas Marital Satisfaction Scales. Journal of Health and Development. 2015; 4(2):158-67.

12. Lu Y, Zhou T, Wang B. Exploring Chinese users' acceptance of instant messaging using the theory of planned behavior, the technology acceptance model, and the flow theory. Computers in human behavior. 2009; 25(1):29-39. https://doi.org/10.1016/j.chb.2008.06.002

13. Hallajzadeh H, Khalifehloo SF, Aghaghalazadeh F. The manner of social actor's representation in divorce demanding women's discourse based on Van leewen (2008): forensic linguistics approach. Language Related Research. 2017; 8(4):1-21.