

**KNOWLEDGE AND ATTITUDE OF PRIMARY HEALTH CARE PROVIDERS REGARDING
DOMESTIC VIOLENCE. A VALIDATION STUDY.**

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ABSTRACT

Background: Violence against women is a worldwide problem with extensive repercussions. Primary care physicians frequently are the first in the community to encounter the battered woman. They must be equipped with the necessary knowledge, training and experience. We developed a questionnaire to obtain information from the physicians and nurses on various aspects of domestic violence (DV)

Objectives: The aim of this study was to test the reliability and validity of this questionnaire to evaluate knowledge and attitude of primary care providers towards DV.

Methods: This study was carried out in 5 primary health care centers on 10 physicians and 10 nurses who were asked to complete a self-administered close-ended questionnaire that included 4 main aspects relevant to DV, namely Knowledge, attitude, causes and topics that participants were interested in to be included in training workshops. Each domain consisted of a number questions (items). Test-retest reliability was tested by Spearman's correlation coefficients. To evaluate for internal consistency, parity co-variances were used to estimate Cronbach's alpha. Discrimination between participant groups (physicians and nurses) was tested by Mann-Whitney test. Spearman's correlation was utilized to test the correlations between different domains to evaluate the convergent validity.

Results: Test re-test reliability of the questionnaire revealed that all scales were reliable, with an overall significant strong correlation ($r = 0.90$). Testing the internal consistency revealed that coefficients of Cronbach's α were > 0.80 for all domains except for items of management of DV and relationship causes of DV. Overall, the scales of the questionnaire could discriminate between physicians and nurses ($P = 0.001$). Attitude scores were significantly higher in nurses, whereas knowledge and causes scores were higher in physicians. Within each studied aspect, the scores of different domains in the questionnaire were positively correlated with each other significantly.

Conclusion: The questionnaire was reliable and valid for assessing knowledge, attitude and other aspects of DV among primary care providers.

Keywords: Questionnaire - Validation - Domestic violence

INTRODUCTION

Domestic violence (DV), "battering," and "spousal abuse" are all terms referring to the victimization of a person by an intimate partner.⁽¹⁾ Violence against women is a worldwide problem with extensive repercussions. According to the most commonly used definitions, it may comprise physical, emotional, sexual and economic abuse occurring in an adult relationship between intimate or formerly intimate partners with a pattern of controlling behavior by the abusing partner. Physical violence is frequently ongoing, and associated with increasing entrapment, injury, medical complaints, psychosocial problems and unsuccessful help-seeking.⁽²⁾

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Past or current family violence, an important and common problem experienced by women seen for medical care, is an unrecognized barrier to good patient-physician communication.⁽³⁾

DV has a deteriorating influence on society by affecting victims, their children, families, and friends, as well as social and financial relationships. Abused females who have poor physical and mental health suffer more injuries and use more medical resources than non-abused females. Females who have experienced physical, sexual, or emotional violence suffer a range of health problems, often in silence. Gender-based violence is widely recognized as an important public health problem, both because of the acute morbidity and mortality associated with assault and its longer-term impact on women's health.⁽⁴⁻⁶⁾

Health care workers have the opportunity and obligation to identify, treat, and educate females

who are abused. Health care institutions can make significant contributions to addressing violence against females by supporting clinicians and victims.⁽⁷⁾.

Since primary care physicians frequently are the first in the community to encounter the battered woman, they must be equipped with the necessary knowledge, training and experience to identify the problem and refer the patient to the appropriate support facilities.⁽⁸⁾

Unfortunately, neither medical nor nursing curricula comprehensively cover DV-related issues, such as legal rights of females and the medical consequences of DV and intervention strategies in Kuwait. To our knowledge, no collaborative training projects were carried out by different organizations. Neither clinical guidelines nor specific recommendations with regard to DV have been implemented.

There are many surveys which have assessed the knowledge, attitude, and practices regarding DV in different health care providers in developed countries.⁽⁹⁻¹¹⁾ In Kuwait, no study has been conducted to evaluate primary health care providers' knowledge, attitude, and behaviors about DV.

Several knowledge-attitude-behavior models have been developed to assess health care provider characteristics and training needs in relation to DV. Of particular interest were those models constructed through the use of psychometric techniques, which have resulted in some refined tools that may guide future DV policy interventions and training programs.⁽¹¹⁻¹³⁾

We developed a questionnaire to obtain information from the physicians and nurses on various aspects of DV. It was derived from other published studies dealing with the same topic as well as from our own experience.^(7,10,13)

The aim of this study was to test the reliability and validity of this questionnaire to evaluate knowledge and attitude of primary care providers towards DV.

METHODS

Setting and design:

In Kuwait, primary care is provided by family physicians (FPs) or general practitioners (GPs). FPs undergo 4 years of specialization during which they receive training in the management of a wide range of acute and chronic physical and psychosocial conditions and illnesses that are prevalent in family practice. GPs do not undergo any specialization training after completing medical studies. This study was carried out in April 2010 in 5 primary health care center representing the 5 health region in Kuwait. The study design is a cross-sectional descriptive one. From each center, 10 physicians and 10 nurses were asked to participate in the study. Local ethics committee approval was obtained for

the study.

Data collection:

A self-administered close-ended questionnaire was used to obtain data from the participants. It included 4 main aspects relevant to DV, namely Knowledge, attitude, causes and topics that participants were interested in to be included in training workshops. Among the knowledge aspect, 4 domains were included namely deprivation (10 items), psychological domain (4 items), physical domain (6 items), and sexual relationship (3 items). Under the attitude aspect 3 domains were included, namely relationship between partners (6 items), reasons for hitting wives (8 items), and management of domestic violence (4 items). The aspect of the causes of domestic violence included 3 domains, namely individual (5 items), relationship and community causes (5 domains), and society causes (4 items). Lastly, the aspect of the topics to be included in training workshops was considered as one domain that included 10 items. Participants indicated their answer for each item using a 5-point, Likert-scale ranging from 1 (Strongly agree) to 5 (strongly disagree). For each participant, the scores were summed and transformed into percentage score by the formula; score * 100/ number of answered questions * 5.

Statistical analysis:

To test for intra-subject variations, physicians and nurses, who participated in the study, received the same questionnaire twice, separated by a mean time interval of 10-20 days. In order to measure short-term test-retest reliability, Spearman's correlation coefficients for the subscales were calculated.⁽¹⁴⁾

To evaluate for internal consistency, parity covariances were used to estimate Cronbach' alpha that summarized the inter-item correlations of all items in each domain scale in the questionnaire. Subscales are considered internally consistent when value of Cronbach' alpha for these subscales that comprise more than one questions per scale equal 0.80 or more.⁽¹⁵⁾

Discriminative validity evaluated whether the questionnaire could discriminate between different groups. Discrimination between participant groups (physicians and nurses) was tested by Mann-Whitney test.⁽¹⁴⁾ Convergent validity ensured that domains of the questionnaire correlated positively with one another. Spearman's correlation was utilized to test these correlations between different domains.⁽¹⁴⁾

Data were analyzed using a "SPSS for Windows" statistical package.

RESULTS

Median age was 38 for physicians and 29 years for nurses and female gender was presented in 52% of physicians and predominated in nurses (94%) ($p <$

0.001). Physicians had statistically significant longer period of experience than nurses (median=14 versus 7.3, $p<0.001$). Kuwaiti nationality was presented in 42% of physicians and only in 16% of nurses ($p = 0.004$). Married subjects represented 86% and 88% of physicians and nurses respectively without a significant difference.

Reliability:

Test re-test reliability of the questionnaire revealed that all scales used were reliable. Regarding knowledge score, intra-class correlation coefficients between item scores were 0.84 for deprivation, 0.86 for psychological domain, 0.72 for physical domain and 0.88 for sexual relationship. Regarding the attitude scales, correlation coefficients between item scores were 0.91 for relationship between partners, 0.91 for reasons for hitting wives, and 0.89 for management of violence. In respect to causes of domestic violence, correlation coefficients between item scores were 0.97 for individual causes, 0.92 for causes due to relationship and community causes, and 0.88 for society related causes. The opinion of the participants regarding topics to be included in training workshops had intermediate significant correlation ($r = 0.31$). That is there was a high degree of repeatability and reliability of the questionnaire with an overall significant strong correlation ($r = 0.90$) (Table I).

Internal consistency:

Regarding knowledge score, Coefficients of Cronbach's α were 0.82, for 10 deprivation items, 0.95 for 4 psychological items, 0.84 for 6 physical items, and 0.93 for 3 sexual items that were all

internally consistent (coefficient $\alpha > 0.8$). Regarding the attitude scale, Coefficients of Cronbach's α were 0.80 for 6 relationship between partners items and 0.86 for 8 items of reasons for hitting wives. However, a low coefficient (0.24) was detected in case of items of management of DV. As regards causes of domestic violence, Coefficients of Cronbach's α were 0.85 for 5 individual causes, 0.78 for 3 community causes and 0.91 for 4 society cause. For two relationship causes the coefficient was only 0.2. A coefficient of 0.86 for 10 items was detected regarding the domain for topics that participants were interested in for training workshops (Table II).

Discriminant validity:

Overall, the scales of the questionnaire could discriminate between physicians and nurses ($P = 0.001$). Scores were significantly higher in nurses than in physicians regarding the three domains of the attitude, higher in physicians than in nurses regarding the three domains of the causes of domestic violence. However, the questionnaire could discriminate between physicians and nurses regarding psychological and sexual knowledge domains, but not for deprivation and physical domains. Also, there was no statistical difference between both groups for the topics to be included in the training workshops (Table III).

Convergent validity:

Within each studied aspect, the scores of different domains in the questionnaire were positively correlated with each other significantly (Table IV).

Table I: Basal and re-test percentage score (median and Inter-quartile range), with spearmans' correlation coefficients

Scale readings	Basal reading		Re-test reading		r
	median	IQR	median	IQR	
Knowledge:					
Deprivation	72.0	25.0	70.0	24.0	0.84*
Psychological	90.0	65.0	95.0	65.0	0.86*
Physical	100.0	3.0	100.0	3.0	0.72*
Sexual	86.7	80.0	86.7	66.7	0.88*
Attitude					
Relationship between partners	56.7	13.3	57.0	16.0	0.91*
Reason for hitting the wife	32.5	22.5	35.0	25.0	0.91*
Management of violence	45.0	15.0	45.0	15.0	0.89*
Causes					
Individual	72.0	31.0	76.0	31.0	0.97*
Relationship / community	80.0	32.0	82.0	28.0	0.92*
Society	75.0	60.0	75.0	60.0	0.88*
Training workshops					
Topics	46.0	6.8	47.0	8.0	0.31*
Overall	71.1	10.2	72.0	11.3	0.90*

*: $P = 0.001$

Table II: Scale headings and values of Cronbach's alpha

Scale headings	Number of items	Cronbach's alpha
Knowledge:		
Deprivation	10	0.82
Psychological	4	0.95
Physical	6	0.84
Sexual	3	0.93
Attitude		
Relationship between partners	6	0.80
Reason for hitting the wife	8	0.86
Management of violence	4	0.24
Causes		
Individual	5	0.85
Relationship	2	0.20
Community	3	0.78
Society	4	0.91
Training workshops		
Topics	10	0.86

Table III: Domestic violence score in physicians and nurses, median and inter-quartile range are presented

Scale headings	Physicians (n = 50)		Nurses (n = 50)		Mann-Whitney test P
	Median	IQR	Median	IQR	
Knowledge:					
Deprivation	78.0	17.0	68.0	34.0	0.85
Psychological	95.0	20.0	60.0	75.0	0.002
Physical	100.0	0.0	100.0	3.3	0.94
Sexual	100.0	13.3	46.7	80.0	< 0.001
Attitude					
Relationship between partners	53.3	10.8	60.0	6.7	0.002
Reason for hitting the wife	25.0	12.5	40.0	15.6	< 0.001
Management of violence	45.0	15.0	55.0	15.0	< 0.001
Causes					
Individual	78.0	20.0	64.0	20.0	< 0.001
Relationship / Community	84.0	16.0	60.0	32.0	< 0.001
Society	85.0	31.3	40.0	50.0	< 0.001
Training workshops					
Topics	46.0	7.0	46.0	6.3	0.75
Total	73.2	13.3	67.4	9.1	0.001

Table IV: Correlation between different scales among 50 physicians and 50 nurses,
Spearman's correlation co-efficient is presented

Scale headings	Deprivation	Psychological	Physical
Knowledge:			
Psychological	0.74**		
Physical	0.12*	0.17*	
Sexual	0.47**	0.80**	0.29**
Attitude	Relationship between partners	Reason for hitting wife	
Reason for hitting the wife	0.22*		
Management of violence	0.16*	0.14*	
Causes	Individual	Relationship / Community	
Relationship / Community	0.71**		
Society	0.69**	0.80**	

*: P = 0.05

**: P = 0.01

DISCUSSION

Battered women are extensive consumers of medical services. Primary care physicians frequently are the first in the community to encounter the

battered woman. We intended to assess knowledge and attitude of primary care providers towards DV. A variety of different measures have been applied in this issue. Since none of these measures had been

used in Kuwait before the beginning of our study, it was useful to develop a valid, rapid, and easy to complete one. One of our aims was to appraise the suitability of this questionnaire. The questionnaire was assessed regarding its reliability, internal consistency, and discriminant and convergent validity.

If test scores are to be used to make accurate inferences about an examinee's ability, they must be both reliable and valid. Reliability of the questionnaire was examined using test-retest procedure and conducted on all participants included in this study. This estimate refers to the degree of overlap between two measurements taken at two different points in time using the same scale and with the same respondents. The correlation between basal and retest overall readings, as well as for different domains in the studied aspects were very strong and statistically significant. However, the basal and retest answers for the topics that participants were interested in to be trained upon showed significant intermediate direct correlation. This could be due to the wide range of topics mentioned in the questionnaire. As the reliability correlation for the different domains of the questionnaire were as consistent and high as for the overall score of the questionnaire, it could be considered flexible regarding presentation of data. It could be presented as overall score or individually for each domain which would be of value in practical and research fields.^(16,17)

Reliability is a prerequisite for validity. However, tests can be highly reliable and still not be valid for a particular purpose. Determining the reliability of a test is an important first step, but not the defining step, in determining the validity of a test.^(18,19)

Validity was defined as an integrated evaluative judgment of the degree to which empirical evidence and theoretical rationale support the adequacy and appropriateness of inferences and actions based on test scores and other modes of assessment. It is a matter of degree, not absolutely valid or absolutely invalid.⁽²⁰⁾ There are many different methods that can be used to establish the validity of a test's use.⁽¹⁸⁾

Internal consistency of a scale refers to the degree to which items of the scale "hang together" and was assessed in our study by inter-item correlation. The questionnaire demonstrated good internal consistency where coefficients of Cronbach's α were > 0.80 for all domains of all aspects of the questionnaire except for management of violence in the attitude aspects (0.24), partners' relationship and community in the aspect of causes of violence (0.2 and 0.78 respectively). This means that each domain except management attitude, partners' relationship and community causes of violence included a closely related or a homogeneous group of items. This could be due the small number

of items in the domain or the scaling of the response for items particularly in management domain. The items within each domain should be retained as they were in the questionnaire without modification or replacement between domains. The three domains where Cronbach's α were < 0.80 should be evaluated and modified to improve the internal consistency of these domains. Direct questioning in our study indicated that participants regarded the items as comprehensive, easy to understand and of considerable relevance to themselves.

Discriminant validity is designed to test, in our case, the ability of the questionnaire to prove the predetermined hypothesis that there was a difference between physicians and nurses regarding impact knowledge and attitude towards DV. In terms of discriminant validity, significant differences between groups were observed in all domains of the attitude and causes of violence aspects with higher scores in nurses than physicians. This could be because the majority of nurses were females in our sample. This went with the finding reported by other studies.^(7,21,22) For the knowledge aspect, higher scores were recorded for physicians than for nurse as reported in previous studies.^(3, 23) However, group differences were detected for psychological and sexual knowledge domains but not for deprivation and physical domains. This could be due to concordance of knowledge between both groups regarding these two domains. Also, No significant difference could be detected regarding the topics to be included in the training workshops. This indicated that both physicians and nurses agreed about and interested in learning about the same topics. Overall, the questionnaire could differentiate between both groups with higher score for the physician group. Discrimination between physicians and nurses was more successful regarding psychological and sexual knowledge, attitude, and causes of violence than deprivation and physical knowledge and topics to be included in the future training programs. This does not jeopardize the discriminant validity of the questionnaire as its overall score has been proved to be valid.

Convergent validity of the questionnaire was tested, by analyzing correlation between scores of different domains. Our results revealed that the scores of the studied domains correlated together positively and significantly. It is possible, if required, to maintain and use the detailed information given in the replies, by analyzing either each question or groups of questions which form a domain.

Test validity, or the validation of a test explicitly, means validating the use of a test in a specific context. Therefore, when determining the validity of a test, it is important to study the test results in the setting in which they are used. From the above, it is

apparent that the questionnaire is an easily administered scale that could rapidly capture data related to knowledge and attitude towards DV among primary care providers. This study further showed the reliability, internal consistency and construct validity of this scale that could be applicable and used in Kuwait. It was easy to use in this study as indicated by its completion by all participants who were selected for this validation study. It could account the degree of knowledge of the participants and their attitude towards DV, and can differentiate between physicians and nurses. Furthermore, it allowed assessment of relevant DV-specific aspects.

Conclusions:

The studied questionnaire is reliable and valid. It was proved to be a suitable tool for assessing knowledge and attitude of primary care providers towards DV.

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