

Validity and Reliability of the Knowledge, Attitude and Practice (KAP) Questionnaire about Cervical Cancer and its Screening among Iranian Women

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ABSTRACT

Introduction: Cervical screening has decreased the incidence and mortality of cervical cancer worldwide. Due to a low incidence rate of cervical cancer in Iran and several Middle Eastern countries, an opportunistic screening is available for women in this region. We aimed to design and validate a questionnaire about Knowledge, Attitude, and practice (KAP) for cervical cancer and cervical screening among Iranian women.

Methods: We drafted a questionnaire about KAP of women about cervical cancer and its screening. Content validity was examined and the questionnaire was revised based on the scores provided by seven experts. We, studied reliability of the questions by performing test-retest analyses of data from 112 subjects and estimation of Cronbach Alpha and Interclass Correlation Coefficient (ICC).

Results: The questionnaire consist 64 questions about cervical cancer and its screening including 27 characteristics, 20 knowledge, 9 attitude and 8 practice questions. Knowledge questions had higher validity (0.8) than attitude and practice questions (0.6). Cronbach Alpha for knowledge, attitude and practice were 80, 82, and 93 percent, respectively. Corresponding Interclass correlations were 88, 77 and 95 percent, respectively.

Conclusion: Validity and reliability of the designed questionnaire was sufficient to evaluate knowledge, attitude, and practice of women about cervical cancer and its screening

Keywords: *Validity, Reliability, Questionnaire, Cervical Cancer, Screening, Iran.*

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Introduction

Although cervical cancer is a preventable cancer, it is still the second most common cancer among women and nearly half a million women annually diagnosed with cervical cancer worldwide.¹⁻⁴ However, cervical cancer is not a common cancer among Iranian and other countries in the Middle-East.^{5,6} In Iran, age-standardized incidence rate (ASR) of cervical cancer was estimated to be from 0.8 per 100,000 in Ardabil province in the northwestern Iran up to 5 in 100,000 in the capital city Tehran.⁷ However, due to lack of agonized screening in these countries,⁸ majority of patients are diagnosed in the advanced stages and prognosis is quite poor.

Cervical screening detects precancerous lesions and removal of the lesions will prevent occurrence of the advance cancers. It has been shown that awareness of the cancer screening methods and performing Pap smear test regularly, improve the compliance of women to attend in the screening program and, thus reduce the risk of invasive cervical cancer.⁹⁻¹¹ Cervical cancer screening test was widely started on 1999 Iran, when it was offered as a free service in all health centers for women aged 20-65 year every three year. Due to a low incidence rate of cervical in Iran, this program was found to be cost-ineffective and discontinued. However, an opportunistic screening was launched afterwards and recommended that all women over 21 years or three years after the first intercourse, should undergo Pap smear test annually for the first three years and continue every 3 years until age of 65.¹² The screening is opportunistic in the sense that the cost of screening is paid by women themselves and it is offered when they visit an obstetrician or gynecologist for prenatal care or gynecological disorder. Cost of screening is not paid by the insurance companies. Opportunistic screening for cervical cancer was found to be ineffective in other countries. We believe that most women particularly those with low socioeconomic status do not attend screening, which could partly be due to inadequate knowledge, and their false attitudes and also cost of screening. However, there is no report on the efficiency of this program among Iranian women.

In order to survey the efficiency of the opportunistic screening we have planned to survey knowledge, and at-

titudes and performance of Iranian women about cervical cancer and the screening. It is obvious that the heart of a survey is its questionnaire. Drawing a sample, hiring and training interviewers, and other preparatory work is necessary before the conduct of a survey. Survey results crucially depend on the questionnaire used for the survey, irrespective of how the data collection is mediated, e.g., self-administered or by an interviewer. To minimize response errors, questionnaires should be crafted in accordance with best practices and standard approach. We have design a standard questionnaire and examined its reliability and validity among Iranian women.

Methods

We reviewed the literature and published questionnaires about cervical cancer and screening and drafted a questionnaire to answer concerns about cervical cancer and screening. We assessed content validity¹³ of the first draft based on opinions of seven experts. The experts were asked to judge about the proportion of each of the terms on a 5-point Likert scale (completely appropriate=5, appropriate=4, relatively appropriate=3, inappropriate=2, completely inappropriate=1). They were also asked to provide their ideas and suggestions about each specific question. Validity coefficients and average scores of for each question were calculated and questions within average score less than 0.4 were eliminated or modified. In addition, in order to study the validity of the questionnaire, we interviewed 112 married healthy women visiting a patients in seven hospitals including Arash, Taleghani, Shariati, Imam Khomeini, Vali-e-Asr, Cancer Institute, and Mirza Kouchak Khan hospitals that located in different part of the capital city Tehran and admit women who are represent almost all socioeconomic status. We designed to recruit equal proportion of women from the selected hospitals (about 15 women from each hospital) and different age groups. We repeated the interviews through telephone after two weeks. We used descriptive statistics, Cronbach's Alpha and Internal Class Correlation using the test-retest data. STATA version. 11.2 were used for statistical analyses.

Results

The questionnaire consists of 64 questions, including 27 questions about subject's characteristics including reproductive history, occupation, education level, socioeconomic status, and history of hysterectomy, 20 knowledge questions about Pap smear test and prevalence, symptoms, and risk factors of cervical cancer, 9 questions about attitude, and 8 questions about experience about Pap smear test. The questionnaire is available upon request from the author.

Average age the interviewees in the validation study was 40.43 ± 1.06 and they were from all education levels. Almost all women (96%) were married (**Table1**). Content validity ratio for the knowledge questions was higher than (80%) the ratios for attitude and practice questions (60%). Except a low validity (10%) for the "Pap smear test cause cervical infection" form the knowledge questions and "have you ever done Pap smear test?" From the practice questions, the rest of statement/ questions, had a reasonably high validity (**Table 2**). We found that coefficient of the Cronbach's Alpha for the whole of questionnaire was 0.90 in overall, were 80%, 82% and 95% for knowledge, attitude and practice questions, respectively. Interclass correlation (ICC) coefficients were 88%, 77%, and 95% for the knowledge, attitude, and practice question groups, respectively (**Table3**).

Discussion

We used a standard approach and designed a comprehensive questionnaire with appropriate reliability and validity to study knowledge, attitude and practice of Iranian women living in Tehran about cervical cancer and its screening. The final questionnaire consist 64 questions. It will help evaluate the situation in different Iranian population and plan for appropriate intervention to improve the preventive measures.

The strength of our questionnaire include its standard design and it high reliability and validity. Coefficient of Cronbach's Alpha for practice questions was 0.93 and for the knowledge and attitude questions were 80%. Internal Class Correlation for all areas is more than 70%. In addition we included different socioeconomic, and age groups in the validation study. We test standardized the question-

Table 1. Characteristics of interviewees in the validation study of the knowledge, attitude, and practice questionnaire about cervical cancer and screening among Iranian women

Variables	No.(%)
Age (year)	
19-34	35 (31.25)
35-50	56 (50)
51-56	21 (18.75)
Educational level	
Illiterate	5 (4.5)
Primary school	25 (22.5)
Under graduates	28 (25.2)
Diploma	39 (35.1)
University education	14 (12.6)
Marrital status	
Married	4 (3.6)
Widow	107 (96.4)

naire among women living in different part of the Tehran city, where more than seven million people with different sociocultural background is living and could be assumed a reasonable representative for Iranian population. In particular, questionnaire can be used among 40% of the Iranian population living in the large cities, albeit some modifications might be needed due to specific language and cultural variations. .

However we faced a few limitations. Two questions had limited validity from the knowledge and practice categories. Because answer to these questions provide important information and they were included in several questionnaires¹⁴⁻¹⁷ from other countries, were phrased the questions based on the expert opinions and kept them in the questionnaire.

Attention to the questionnaire validity is crucial for epidemiological studies. Different measurement tools were designed to evaluate knowledge, attitude and practice regarding cervical cancer and its screening test. However, author provided little information about the validity and reliability of the questionnaire. In addition, they cov-

Table 2: Content validity ratio (CVR) of all areas and questions of final questionnaire to study knowledge, attitude and practice of women regarding cervical cancer and cervical cancer screening test

Area (CVR)	Questions	Content validity	Average score
Knowledge (0.8)	Answers: 1. True 2. False 3. I do not know		
	1. Cervical cancer is one of the most common cancer s among women	1	1
	2. Cervical cancer is preventable	1	1
	3. Cervical cancer is curable	1	1
	4. Genitourinary infections increase the risk of cervical cancer among women.	1	1
	5. Spotting between menstrual periods may be a symptom for cervical cancer	1	1
	6. Bleeding and spotting after menopause may be associated with cervical cancer	0.7	1
	7. Bleeding and feeling pain after intercourse is a symptom for cervical cancer	0.7	1
	8. Cervical cancer may be without sign in early stages.	1	1
	9. Pelvic pain is one of cervical cancer symptoms.	0.7	0.9
	10. Early marriage (under 18) increases the risk of cervical cancer	1	1
	11. Pap smear test before symptomatic cervical cancer, may help detect cervical cancer earlier	0.7	1
	12. First Pap smear test should be done at age 20	1	1
	13. Pap smear test after age 65 is necessary	0.7	1
	14. All women should be tested by Pap smear at least every 3 years.	0.7	1
	15. Pap smear test is recommended only for older women.	0.7	0.9
	16. Pap smear test should be performed only if infection and bleeding was seen	1	1
	17. Pap smear test can be done among Pregnant women	1	1
	18. Pap smear test may cause cervical infection	0.1	0.9
	19. How did you know about Pap smear? (optional answers were provided)	0.7	1
	20. What was the reason for not doing Pap smear regularly? (optional answers were provided)	0.7	1
Attitude (0.6)	5. Completely agree 4. Agree 3. No idea 2. Disagree 1. Completely disagree		
	1. Pap smear test is expensive	0.7	1
	2. Pap smear test is painful	0.4	0.9
	3. Pap smear test is time-consuming	0.7	1
	4. Performing Pap smear test disturb privacy of women	0.4	0.9
	5. Pap smear test is effective in early detection of cervical cancer.	0.7	1
	6. Pap smear is not effective for cervical cancer prevention.	0.7	1
	7. I prefer doing Pap smear test before experiencing cervical cancer symptoms	0.4	0.9
	8. Pap smear test is not necessary in asymptomatic individuals.	0.9	0.4
	9. Equipment of the Pap smear test does not have good quality.	0.9	0.7

ered part of the questions about the knowledge, attitude, and practice of women.^{1, 14, 18-19} In this questionnaire, we have covered a complete set of questions and statements about cervical cancer and its screening. However, the questionnaire applies for the situation, where organized

screening is not available. In addition, we did not include any question about HPV testing, and HPV vaccine because they were not available for the cervical cancer prevention in Iran.

We believe that the designed questionnaire could be

Continue Table 2: Content validity ratio (CVR) of all areas and questions of final questionnaire to study knowledge, attitude and practice of women regarding cervical cancer and cervical cancer screening test			
Area (CVR)	Questions	Content validity	Average score
Practice (0.6)			
	1. Have you ever done Pap smear test?	0.9	0.1
	2. How frequent you have done Pap smear test?	1	1
	3. When have you done your first Pap smear?	1	0.7
	4. At what age did you do your first Pap smear?	0.9	0.7
	5. At what age did you do your first Pap smear?	0.9	0.7
	6. When did you do your last Pap smear?	0.9	0.4
	7. How often did you do Pap smear?	0.9	0.4
	8. Have you done Pap smear regularly?	1	1

Table 3. Coefficient of Cronbach's Alpha and Internal Class Correlation in overall and for different categories (knowledge, attitude and practice)		
Internal Class Correlation(ICC)	Cronbach's Alpha	Category
0.88	0.80	Knowledge
0.77	0.82	Attitude
0.95	0.93	Practice

used as a standard tool to measure knowledge, attitude, and practice of women about cervical cancer and its screening in Tehran and several large cities in Iran city. It might also be used in other population after necessary modification.

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