Attitudes and beliefs about cervical smear testing in ever-married Jordanian women

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المواقف والمعتقدات حول فحص لطاخة عنق الرحم بين المتزوجات الأردنيات

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الخلاصة: أجري مسح سكاني بين شهري حزيران/يونيه 2004 ونيسان/إبريل 2005، شمل 760 سيدة من مُراجِعات العيادات العامة المعنية بالنسائيات والتوليد في إربد، بالأردن. وكان الهدف من المسح هو تقصي المواقف والمعتقدات التي تؤثر على قرارات النساء في قبولهن بفحص لطاخة عنق الرحم فيهن. وكانت معارفهن حول سرطان الرحم وفحص لطاخة الرحم ضعيفة بين المنخفضات التعليم وبين المسنات. ومن بين 109 سيدة أجرينَ هذا الفحص سابقاً، كانت 104 (95.4٪) منهن قد أجرت الفحص بصورة تصادُفية، بينما لم تخضع 95٪ من العينة الكلية لإجراء هذا الفحص أبداً. وكانت العوائق الرئيسية أمام إجراء فحص لطاخة العنق هي قلة المعرفة، أو عدم الإحالة من قِبَل المهني الصحي، أو الخوف من أن تكون نتيجة الفحص سيئة. ويدل ذلك على أن برنامج التحرِّي الراهن ليس فعالاً في الوصول إلى غالبية السكان.

ABSTRACT To investigate attitudes and beliefs that affect a woman's decision to undergo cervical smear screening, we carried out a survey of 760 women attending general obstetrics and gynaecology clinics in Irbid, Jordan between June 2004 and April 2005. Knowledge of cervical cancer and the Pap smear test was inadequate in less-educated and older patients. Of the 109 women who had previously had the test, 104 (95.4%) had opportunistic testing. Around 95% of the sample had never had the test. Major barriers to Pap smear screening included inadequate knowledge about the test, not being referred by a health professional and fear of having a bad result. The current screening programme is not effective in reaching the majority of the population.

Attitudes et croyances vis-à-vis des frottis du col de l'utérus chez des femmes jordaniennes non célibataires

RÉSUMÉ Afin d'étudier les attitudes et les croyances qui influencent la décision d'une femme à se soumettre à un frottis du col de l'utérus, nous avons réalisé une enquête auprès de 760 femmes se rendant aux consultations d'obstétrique générale et de gynécologie à Irbid (Jordanie) entre juin 2004 et avril 2005. Les connaissances relatives au cancer du col de l'utérus et au frottis cervico-utérin (test de Papanicolaou) étaient insuffisantes chez les patientes les moins instruites et les plus âgées. Sur les 109 femmes qui avaient déjà subi le test, 104 (95,4 %) avaient fait l'objet d'un dépistage opportuniste. Près de 95 % des femmes de l'échantillon n'avaient jamais subi cet examen. Les principaux obstacles au frottis cervico-utérin étaient le manque de connaissances sur cet examen, le fait de ne pas être adressée par un professionnel de santé et la peur de mauvais résultats. Le programme de dépistage actuel ne parvient pas à atteindre la majorité de la population.

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Introduction

From a global perspective cervical cancer is the third most common form of cancer among women [*1*]. It is also potentially one of the most preventable [*2*]. Ever since the concept of cervical smears was first described by Papanicolaou and Traut in 1941, screening for cervical cancer has been one of the few tests which have been shown to be able to directly reduce mortality and morbidity [*3*]. For this to be achieved, however, there must be a high rate of acceptance by women of regular and high quality testing, with follow-up of abnormalities. A systematic, population-based screening programme which incorporates a call–recall system and adequate quality control measures can help to ensure maximum benefit and impact on incidence and mortality of the disease [*4*].

In many developed countries where sophisticated screening programmes are established, cervical cancer has decreased considerably [*5*]. In developing countries, on the other hand, the situation is quite different. Cervical cancer is the most common female malignancy in a few countries [*6,7*], with very little change in its incidence. Morbidity and mortality are high because most women present at an advanced stage of the disease [*8*].

In many developing countries, women's knowledge of cervical cancer is very limited. It has been demonstrated that the vast majority of women in some countries had not heard of cervical cancer and even more knew nothing about cervical screening [*9,10*]. It seems that the discrepancy between developed and developing countries concerning rates of incidence and mortality of cervical cancer is paralleled by a similar discrepancy regarding education and knowledge of cervical cancer and its prevention. Another reason for poor uptake in the cervical screening programme may be the lack of communication between healthcare workers and patients regarding availability and benefits of the screening.

In developed countries, infrequent uptake of cervical smear tests is more often recorded among women who are older, poorer or from minority backgrounds [*11*]. Furthermore, demographic factors such as age, education and ethnicity, and sociopsychological factors such as social class, personality, embarrassment, fear and lack of health insurance, and also structural factors such as beliefs, attitude and knowledge about the disease and the smear test have been documented as determinants of an individual's participation in cancer screening [*12,13*]. Another important issue, for which few published data are available, is whether women who are informed about the benefits of cervical screening may be reluctant for some reason to have cervical smears.

This survey was carried out in order to collect information concerning knowledge, attitudes and practices towards cervical cancer, the Papanicolaou (Pap) test and barriers to screening, and to investigate the influence of socioeconomic background on knowledge and use of cervical cancer screening. The results will provide baseline information on cervical cancer screening uptake among women in Jordan.

Methods

The study was performed between June 2004 and April 2005 at King Abdallah University Hospital at Jordan University of Science and Technology, Irbid, Jordan. This is a large tertiary referral hospital serving mainly the northern part of the country.

A questionnaire was constructed for this survey to measure health behaviours in national surveys. The questionnaire was

pilot-tested in a sample of 30 women who were not part of the study sample to ensure cultural acceptance and level of validity and degree of repeatability ($\kappa = 0.85$).

Only married or previously married women were included in the study (single women were excluded for cultural reasons). Questionnaires were given to all 794 eligible women who were attending 3 general obstetrics and gynaecology clinics during the study period. Informed consent was obtained verbally from all the participants. Thirty four women refused to participate when invited or responded incompletely to the questionnaire and were excluded.

The information included in the questionnaire was of a multiple choice type and covered: demographic data on age, occupation, education, marital status, number of children; general knowledge about cervical cancer and cervical smear tests; data on reasons and circumstances of having/not having a smear test; and general preferences about future testing.

Table 1 **Sociodemographic data for a sample of 760 ever-married women from Irbid, Jordan**

Characteristic	No.	%
Age group (years)		
17–24	167	22.0
25–44	372	48.9
45–66	154	20.3
> 66	67	8.8
Employment status		
Employed	114	15.0
Unemployed	646	85.0
Education[a]		
No formal schooling	121	15.9
Primary	349	45.9
Secondary	167	22.0
College/university	121	15.9
Marital status		
Married	661	87.0
Widowed/divorced	99	13.0
Parity		
Parous	737	96.9
Nulliparous	23	3.0

[a]*Data missing for 2 participants.*

Results

Of the 794 questionnaires distributed to the clinics, 760 (95.7%) were completed. Demographic characteristics of the respondents are shown in Table 1. The mean age of the women completing the survey was 36.4 [standard deviation (SD) 8.9; range 17–72)] years. Educational attainment ranged from no formal schooling to vocational college education or higher. Over 80% of the women had completed primary school.

The mean number of children was 5.3 (SD 1.8). Women who had delivered children were significantly more likely to have received a Pap smear (96.9%) than women who had no children ($P < 0.05$). We found that 85.0% (646) reported that they were currently sexually active, and of these, 65.7% (425) reported using some type of birth control. The most commonly used methods were coitus interruptus (34%), rhythm method (24%), sheath (14%), oral contraception (9%), and the intra-uterine device (6%). The mean number of annual clinic visits (family planning and general gynaecology clinics) was 4.2 (SD 1.8; range: 1–20).

Approximately half (48.8%) the women interviewed had heard about the Pap smear and 253 (33.3%) had heard about cervical cancer. These had a higher level of education: secondary or college versus no education or primary school only ($P < 0.001$ for both). Despite the moderate

awareness about cervical cancer, 85.7% of the women had never received a Pap smear. One hundred and nine had ever had a Pap smear (14.3%; 104 opportunistic and 5 non-opportunistic), and more than half of these (52.2%) had smears within the previous 3 years. Only 5.6% reported having regular tests. The rates of smear testing varied significantly with age. Older women were the least likely to have Pap smears in their lifetime, currently or regularly; < 8.0% of the 66 participants ≥ 65 years old had had a Pap smear within the previous 3 years, and only 4.6 % had regular examinations.

For the 14.3% of women who had ever received a Pap smear, the average length of time they planned until their next smear was 0.9 (SD 0.4; range: 1–5) years. Further, 62.8% of respondents who had heard of the Pap smear preferred a female health care provider and 11.5% reported being very reluctant to have a Pap smear if only a male health care provider was available. The responses to questions assessing women's knowledge about the Pap test and preference about future screening are shown in Table 2.

Among the 52 women (47.7%) who had not had a Pap smear within the previous 3 years, the most frequent reason was anxiety regarding physical privacy. Other reasons for not seeking screening among the whole study sample related to a lack of knowledge about cervical cancer screening. Some women believed that screening was only applicable when it was suggested by a health professional. Others were fearful of having a bad result or were too embarrassed to undergo the test. Some believed that the sampling technique would be painful. The potential barriers toward cervical cancer screening among the whole study population are shown in Table 3.

Table 2 **Knowledge of the purpose of Pap smear screening and preferences regarding future testing among respondents who had heard of the test (*n* = 371)**

Variable	Knowledge No.	%
Purpose of Pap smear		
Detection of cancer of the cervix	293	79.0
Prevention of cancer of the cervix	115	31.0
Detection of other cancers	22	5.9
Other	14	3.8
Preference about future testing		
Prefer a female health care provider	233	62.8
Would be very reluctant if only a male health care provider was available	41	11.1

Discussion

High coverage of women at risk of cervical cancer is a key element in achieving a successful screening programme [*14*].

Table 3 **Perceived barriers to Pap smear screening in a sample of 760 ever-married women from Irbid, Jordan**

Barrier	No.	%
Inadequate/lack of knowledge	509	67.0
Not suggested by a health professional	494	65.0
Fear of having a bad result	212	27.9
Embarrassment	197	25.9
Fear of pain	114	15.0
Absence of disease symptoms	114	15.0
Lack of time	106	13.9
Lack of privacy	60	7.9
Financial reasons	52	6.8
Difficulty accessing the service	49	6.4

Since the introduction of the Pap test as a screening method, the incidence of invasive cervical cancer in countries where the majority of women receive regular screening has decreased by more than 70% over the past 5 decades [*15*]. In contrast, some are still falling short of the objective of other countries that, by the year 2010, over 90% of all women will have had 1 cervical smear test within the preceding 3 years [*16*].

Reported prevalence of Pap testing was 80% among a random sample of British women aged 15–78 years [*17*], 87%–88% among Hispanic women in America [*18*] and 73% among women in Singapore [*19*]. The rate of Pap smear testing in our study was very low at 14.3% and only 7.5% had had a test within the previous 3 years and could be considered adequately screened. Of even more concern is that only 5.6% of the study population undergo regular screening. This is especially the case for the population most at risk for cervical cancer. Several factors could account for low prevalence, including lack of organized screening programmes, lack of awareness, myths and misconceptions [*18*]. It is important that cervical cancer screening programmes are affordable, accessible, and considered appropriate by the target population. We assessed some of these aspects in our survey.

To attend the programme, women have to be aware both of the disease and of the means of early detection and prevention. There are several studies showing that knowledge about cervical cancer and Pap testing influences uptake of cervical cancer screening services [*18,19*]. This was especially true among the women in this study. Whereas about 80% of those interviewed knew cervical cancer could be detected, only 30.9% referred to the Pap test as a means to prevention. We identified this gap in knowledge as one of the most important determinants of inadequate screening status. Lack of knowledge was reported by 66.9% of respondents as a perceived barrier to Pap smear testing. This is consistent with reports from other countries where lack of knowledge and factors related to low socioeconomic status and education level were major barriers to screening [*19,20*].

The overall poor knowledge about cervical cancer and Pap testing in this study would greatly hamper a population-based cytologic screening programme. This poor knowledge may be related to lack of basic education. Nearly 16% of our respondents had no formal education. In a Kenyan survey, the illiteracy rate among cervical cancer patients was about 6 times higher than that among the general population of women aged 15–45 years [*21*].

Our findings demonstrated a lower uptake of Pap test receipt, currency and knowledge to be most prevalent among older age groups. This finding is congruent with a few other studies, where older age was shown to be associated with underscreening [*22,23*]. The underutilization of the Pap test among older women and their lower likelihood of having knowledge of the test are alarming as mortality rates from cervical cancer are highest among these women [*24*]. Similarly, and in agreement with other studies [*25,26*], lower level of education and knowledge was associated with a lower likelihood of Pap screening.

There is currently a lack of information on what educational strategy is most effective for underserved women. A strategy that is successful for one group may not be suitable or appropriate for another. The recommendation of the general practitioner is most often acceptable, and is likely to lead to screening. It has been shown that health care provider recommendations are strong predictors of cervical cancer screening [*22*]. Practitioners need to offer clear explanations and recognize the importance

of exhibiting an unhurried approach when dealing with underserved groups.

Most of the women in this study who had had at least one Pap smear test (86.2%) had opportunistic testing, i.e. as a result of attending for other services such as family planning, antenatal care and gynaecological services [*27*]. This indicates that Pap smear tests are used mostly as diagnostic rather than as screening tests. Nevertheless, it has been demonstrated that opportunistic strategies are effective and acceptable [*28*].

Another barrier to having a smear test that featured prominently in this study was embarrassment. This was reported as a perceived barrier by 25.9% of respondents and confirmed the findings of other reports [*29,30*]. The importance of this in Pap smear screening was highlighted in a study which showed that women who claimed to be too embarrassed to have a Pap test were 7 times more likely to be overdue than women who reported no embarrassment [*31*]. This issue is worth noting regarding attempts to redress Pap test underutilization among women. A female practitioner may be more appropriate and acceptable among women from some cultural backgrounds as their attitudes are influenced by cultural and religious beliefs [*32*]. A very high percentage of women in this study (62.8%) expressed preference for having a female administer their test. Clearly, there is a need to provide Pap smear services that are both acceptable and accessible in a way that addresses these cultural associations. This approach should include paying attention to unnecessary exposure and ensuring adequate covering of the woman's body during examination. Where possible, screening services should be provided by female health workers.

As regards other barriers to Pap smear screening, 27.8% of women in this study experienced anxiety about getting a bad result, which is concurrent with similar research which reported anxiety and fear in association with an invitation to participate in screening and during the actual participation [*33*]. However, a later study reported that the majority of women considered the test to be of no major concern [*34*]. The reason for anxiety in some patients has been suggested to result from the sensitive situation concerning intimacy associated with the examination.

Concern about pain and discomfort associated with screening was reported as a perceived barrier in our study. This may be a difficult barrier to overcome among asymptomatic women. Those who expressed this concern may have had painful and unpleasant experiences with prior Pap tests, or have heard about such experiences from others. To help women cope with concerns about pain and discomfort associated with Pap tests, interventions could focus on detailing the nature of the sample and teaching women some relaxation skills. In addition, the possibility of pain needs to be acknowledged rather than ignored so that women can feel a sense of trust.

Absence of disease symptoms was reported as another perceived barrier to having a smear test. The belief that screening is unnecessary in the absence of symptoms could be overcome by providing more precise information. Education should focus on the preventive nature of the Pap smear and to counter the idea that it is only necessary in the presence of symptoms.

As regards other perceived barriers in this study, neither the financial factor nor accessibility seemed to be a problem. Although many seem to be willing to pay for a Pap test, availability of screening services free of charge is important for reaching people for whom financial problems are an obstacle to screening.

A population-based screening programme remains the most cost-effective

strategy to reduce incidence, morbidity and mortality from cervical cancer [*3*]. Policies and initiatives aimed at ameliorating sociodemographic differences in Pap test screening should focus on the health workers who are likely to provide services for the underscreened segments of the population. They should be encouraged to recommend screening to their patients regardless of their age or sociodemographic and economic status. In this context, we suggest that cervical cancer screening strategies should be part of a more comprehensive health policy that ensures accessibility of regular health care to the underserved women.

As to the accuracy of this survey, the possibility of overestimation should be taken into account. It has previously been shown that self-reports overestimate participation in cervical cancer screening [*35*]. Examining the agreement between health care provider records and patients' self-reports, it has been found that women overestimate the number of smears taken in previous years and how recently they had a Pap test [*36*].

This study was an initial effort to examine cervical cancer screening knowledge and practices limited to a specific geographic region in the north of Jordan. Similar studies need to be conducted in other areas of the country to generalize the findings. However, these findings have important implications for health practitioners and policy makers.

Conclusions

The current programme, based on opportunistic screening, is not effective in reaching the majority of the population. A large proportion of the women did not know about Pap smears and misconceptions still exist. There is need to increase awareness about Pap smear testing and to strengthen the existing health care infrastructure to be able to perform smears. Incorporation of screening into routine primary care services should be considered as well as a more pro-active approach to inviting women to attend the programme.

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Correction

Eastern Mediterranean health journal reviewers' panel, 2007. *Eastern Mediterranean Health Journal*, 2008, Vol. 14, No. 1, pages 234–8.

Dr Nabil Kronfol should have been included in our reviewers' panel for 2007. Dr Kronfol is a long-standing and esteemed reviewer for EMHJ and we regret the inadvertent omission of his name.