Reliability of Omani Women's Self-Reporting of Gynaecologic Morbidities

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Key Words

Gynaecologic morbidity · Community diagnosis

Abstract

Objectives: To assess the agreement of women's self-reports of gynaecologic morbidities (reproductive tract infections, RTIs; genital prolapse, and urinary tract infections, UTIs), physician's observations and the final diagnosis of these conditions. **Subjects and Methods:** A nationally representative sample of 1,662 Omani women selected by a multi-stage, stratified probability-sampling procedure was included in the study. A questionnaire interview, physical and gynaecologic examination, and laboratory investigations were used. **Results:** A total of 1,364 women completed all forms. The agreement between women's report of vaginal discharge and the diagnosis of RTI was poor. The sensitivity but not the specificity improved when the women were asked about specific discharge questions that upset them or are medically suspicious. Sensitivity of self-report in the diagnosis of genital prolapse and UTI from self-report was high but specificity was low. **Conclusions:** Self-report of vaginal discharge, coupled with clinical examination, can be used in community diagnosis of RTI. Self-report of symptoms of vaginal prolapse can also be used for community diagnosis of genital prolapse. A urinary culture should supplement self-reports of UTI to enhance specificity, although the presence of a positive culture in the absence of symptoms is of no clinical significance in non-pregnant women or women without renal disease.

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Introduction

Gynaecologic morbidity is an often overlooked entity in reproductive health programmes. Attention to reproductive morbidity started only recently [1], when it was reported in many studies that gynaecologic disorders were very prevalent ranging from 23 to 52% and from 17 to 56% for reproductive tract infections (RTIs) and genital prolapse, respectively [1–4]. Moreover, these morbidities were found to impact adversely on individuals and nations [5].

The implementation of community-based studies on gynaecologic morbidity consumes too much resource and requires a large number of trained personnel (gynaecologists, laboratory technicians, and cytopathologists). Countries with limited resources may not be able to conduct such investigations at all. Hence, the aim of this study was to investigate the accuracy of Omani women's self-reporting of reproductive (gynaecologic or related) morbidities as compared to the medical diagnosis (either by clinical or laboratory investigation) of these diseases according to pre-set criteria in a community-based survey (National Health Survey, 2000) [6].

Subjects and Methods

This study which is a part of the National Health Survey 2000 (NHS, 2000) [6] examined the feasibility of using a questionnaire for community diagnosis, thereby providing a low-cost information-gathering procedure for screening reproductive health problems in developing countries. The study consisted of a study of

lifestyle risk factors and reproductive health. The sample for the National Health Survey was selected to be representative of Oman as a whole. The survey adopted a multi-stage, stratified probability-sampling design. In the first stage all the ten regions of the Sultanate were chosen and the sample was distributed according to proportional allocation of the population size in each region. In each region, one or more governorates were randomly chosen. The total number of governorates selected was 16 out of 59. Then, each governorate was stratified into urban and rural areas (the villages or remote areas). The urban:rural ratio was 2:1, which is similar to the ratio of the 1993 national census [7]. The second stage was the random selection of enumeration areas (EAs) in each stratum, consistent with the 1993 population census EAs, each containing 80 households.

The third stage was the selection of households in each EA. Maps of the selected EAs were updated and a complete listing of all Omani households in each EA was made to obtain the sampling frame, and then the households were systematically randomly selected. All ever-married women (2,037) aged 15–49 years in the selected household (1,968) were invited to participate in the survey.

The Questionnaires

The questionnaires used in this study were: the 'Household Health Status', which covered the demographic data, i.e. age, sex, marital status, educational status, and working status; the 'Reproductive Health', which covered fertility patterns (number of children ever born, age of woman at her first marriage, last closed birth interval, etc.), fertility preferences, family planning, breast-feeding, antenatal care, obstetric complications, reproductive morbidity, anaemia among adolescents and pregnant women, women empowerment (household decision making and freedom of movement) and finally women's knowledge about AIDS, and the 'Gynaecologic Morbidity Symptoms', which consisted of eight modules: (1) Women's General Health; (2) Menstrual Cycle; (3) Abdominal Pain; (4) Vaginal Discharge, in which women were asked whether they had vaginal discharge or not, and whether or not this discharge upset them; the discharge was described as being of medical concern if it was offensive in odour, accompanied by itching, yellow, green or bloody colour or cheesy white; (5) Urinary Complaints, where women were asked whether they had burning micturition, frequent urination or nocturia, or incontinence; they were considered to have urinary tract infection (UTI) as a verbal diagnosis if they reported burning micturition and frequent urination, nocturia or incontinence; (6) Genital Prolapse, where women were considered to have genital prolapse if they reported that they felt their womb below on squatting or on coughing and sneezing; (7) Complaints during Intercourse, and (8) Infertility.

In addition, the 'Physical Examination Form' for gynaecologic morbidity included sections for general, abdominal, and gynaecologic examinations. The gynaecologic examination was performed by trained gynaecologists in the health centres. Prolapse was described as anterior vaginal wall (cystocele), posterior vaginal wall (rectocele and enterocele) and uterine descent. The latter was graded as first-degree (below the ischial spine but within the introitus), second-degree (outside the introitus), and third-degree if the whole uterus was so descended that the examiner's fingers could be approximated behind the uterus. Finally, laboratory forms included the results of haemoglobin, urine routine and culture, vaginal and cervical swab, and the Pap smear form.

The following RTIs were included: Bacterial vaginosis was diagnosed by the presence of clue cells in vaginal swabs. *Trichomonas* vaginitis was diagnosed by wet mount smear, looking for organisms moving by undulating membrane and flagella. *Candida albicans* was diagnosed by a wet mount smear showing yeast buds or positive culture. Clinical cervicitis was diagnosed by the presence of a mucopurulent cervical discharge. Gonorrhea was diagnosed by a positive cervical swab culture on chocolate agar. Upper RTI includes infection of the uterus, fallopian tubes, and ovaries and was diagnosed if there was uterine tenderness alone or with adnexal tenderness, together with clinical cervicitis.

Statistical Analysis

Data entry was done using EPI INFO version 6 [8]. The process of preparation of the data file was completed by July 2000. Analysis of the data was done using SPSS for windows version 6 [9]. The accuracy of the patients' self-reports as compared with the laboratory investigation or physical examination was measured by using Cohen kappa [9]; a p value of <0.05 was considered statistically significant.

Results

Of the 2,037 ever married women, 1,662 were eligible to report the 'Gynaecologic Morbidity Symptoms' questionnaire and to be gynaecologically examined. The response rate of completing the interview and filling the questionnaires was 88.9%, while that of visiting the health facility (in women's catchment area) for gynaecologic examination was 82.1%, leaving 1,364 women for data analysis.

The age of ever-married women ranged from 15 to 49 years and 41% were 25–34 years. Only 16% completed secondary school or a higher level of education. The majority (73.4%) were from urban areas, currently married (91%) and sexually active (85%). Almost half of the sample had 6 (48.3%) pregnancies or more and had a pregnancy end within the last 2 years (47.2%). The majority of women reported that their household work was low to medium. In terms of personal hygiene, almost half of menstruating women were hygienic (using tampons during menstruation) and the rest adopted a less hygienic behaviour (using cotton or pieces of cloth or wearing the underwear only).

In total, 23% of women were diagnosed to have RTI. Bacterial vaginosis was present in 11%, while other types of vaginitis were less common. Pelvic inflammatory disease was found in 2.7%. About 10% had combined genital prolapse and 11% were diagnosed of having UTI.

More than half (768 women, 56.4%) of the sample reported having vaginal discharge, 141 (20.1%) of them considered it as upsetting. About 272 (20%) of women

Table 1. Comparison of women's report of a vaginal discharge with the laboratory diagnosis of RTI

Women’s report		Presence of RTI				
		no	yes	total		
Presence of discharge						
No		472	121		593	
Yes		571	197		768	
Total		1,043	318		1,361	
Presence of upsetting discharge						
No		430	132		562	
Yes		98	43		141	
Total		528	175		703	
Presence of medically suspicious discharge						
No		852	240		1,092	
Yes		194	78		272	
Total		1,046	318		1,364	
Evaluation of women’s report						
Discharge	Sensitivity %	Specificity %	Predictive value, %		Agree- ment, %	Kappa %
			positive	negative		
Present	45	62	79	26	49	5*
Upsetting the women	81	25	77	30	67	6
Medically suspicious	81	25	78	29	68	6
* Significant at 0.05.						

had discharge of medical concern. In 63.5% of women examined, the physician found that 495 women had scanty while 325 women had moderate amounts of discharge. Symptoms of genital prolapse were reported by 5%, and 8% had complaints suggestive of UTI (data are not shown in the tables).

Kappa statistic was only significant in the presence of discharge versus RTI diagnosis (table 1); however, kappa was low, indicating poor agreement for the three models, which were also of low specificity. Sensitivity was relatively high for the three models (table 2), showing the comparison of women's report of vaginal discharge with physician observation of vaginal discharge. Kappa was significant and the highest when the presence of discharge versus physician's observation and also the presence of discharge of medical concern were compared to physician's observation. However, small kappa indicated poor agreement, especially for discharge that upset the women. On the contrary, clinical examination showed a high specificity and percent agreement with laboratory diagnosis (table 3).

Only reporting of genital prolapse symptoms had significant kappa when compared with the physician's diagnosis of genital prolapse (table 4).

Discussion

This study has a larger sample size than other studies with a similar design [4, 10]. The study by Bhatia and Cleland [4] was a prospective study in a village in South India involving 446 women [4] and the cross-sectional study of Zurayk et al. [10] in rural Egypt involved 509 women. Both studies reported poor agreement between the presence of a vaginal discharge and the diagnosis of RTI. Although the findings of this study are similar to previous ones, the study population is representative of the whole Omani community. Standardised inclusion criteria were used and we had good response rates for physical examination and laboratory investigations. Hence, the findings of this study are reasonable. Judging from either self-report, clinical examination or laboratory investigations, it was clear that RTIs are prevalent in this

Table 2. Comparison of women's report of a vaginal discharge with physician's observation of vaginal discharge

Women's report of discharge	Physician's observation of discharge: detailed tabulation			
	no	scanty	moderate	total
No	244	190	131	565
Yes	227	305	194	726
Total	471	495	325	1,291

Women's report	Physician's observation of vaginal discharge		
	no	yes	total
Presence of discharge			
No	244	321	565
Yes	227	499	726
Total	471	820	1,291
Presence of upsetting discharge			
No	169	354	523
Yes	44	95	139
Total	213	449	662
Presence of medically suspicious discharge			
No	395	638	1,033
Yes	77	182	259
Total	472	820	1,292

Evaluation of women's report						
Discharge	Sensitivity %	Specificity %	Predictive value, %		Agreement, %	Kappa %
			positive	negative		
Present	52	61	43	69	58	12*
Upsetting the women	79	21	32	68	39	0.4
Medically suspicious	84	22	38	70	45	5*

* Significant at 0.05.

Table 3. Agreement of physician's report and laboratory diagnosis of lower RTI

Physician's report	Laboratory diagnosis		
	no	yes	total
Presence of discharge			
No	413	59	472
Yes	564	256	820
Total	977	315	1,292

Sensitivity %	Specificity %	Predictive value, %		Agreement, %	Kappa %
		positive	negative		
41	82	31	88	52	15*

* Highly significant.

Table 4. Comparison of women's report of genital prolapse and UTI symptoms with medical diagnosis

Women's report		Physician's diagnosis of genital prolapse				
		no	yes	total		
Genital prolapse						
No		1,142	114	1,256		
Yes		85	19	104		
Total		1,227	133	1,360		
UTI						
No		1,099	124	1,223		
Yes		87	16	103		
Total		1,186	140	1,326		
Evaluation of women's report						
Women's report	Sensitivity %	Specificity %	Predictive value, %		Agree- ment, %	Kappa %
			positive	negative		
Genital prolapse	93	14	91	18	85	8*
UTI	93	11	89	16	84	5
* Significant at 0.05.						

* Significant at 0.05.

community. This suggests the need for intervention by the health professionals at the primary care level and at the level of the community as a whole.

The study revealed a poor agreement between women's report of vaginal discharge and physician's impression. However, further questioning (characterising the discharge as upsetting or medically suspicious) added to the sensitivity and percent agreement at the expense of specificity. Others considered the presence of a scanty discharge as evidence of agreement with a woman's report of no discharge as women may not notice a scanty discharge [10]. This may account for the better estimates (kappa value of 55) of specificity and agreement between physician's diagnosis and women's reports than in our study. Also, some women may be too embarrassed to respond positively to the question of the presence of a discharge with colour or odour as this may stigmatise them as being less hygienic. Underreporting of RTI seems to be a common feature in community-based studies of gynaecologic morbidity [11].

Reporting of vaginal discharge did not agree well with a diagnosis of RTI, although the percent agreement was better when women reported an upsetting discharge or a medically suspicious discharge. This agrees with the contention that further questioning can improve the agreement between self-report and clinical examination [11]. However, many women who did not report having a dis-

charge were later found to have RTI. Many RTIs are asymptomatic, especially bacterial vaginosis, where 50% are asymptomatic [12]. Candida can colonise the vagina without producing infection, so that candida vaginal infection was classified into: colonisation without infection, mild candidiasis and severe candidiasis [13]. Colonisation without infection is generally not reported, as it will be asymptomatic. Mild candidiasis may also be underreported as the symptoms are mild and infrequent. Women usually tolerate them and relate this to 'women's lot in life' [11].

Bacterial vaginosis and candidiasis were the most prevalent RTIs in this community. From this we can conclude that community-based assessment of the presence of RTI cannot rely solely on the presence or absence of vaginal discharge. Detailed questioning about the nature of vaginal discharge is necessary, but the possibility of underreporting is still high. Physical examination is a good asset as physical examination report had a good specificity for diagnosis of RTI.

There was also excellent sensitivity and percent agreement for the reporting and the diagnosis of genital prolapse. The low specificity probably reflects those women who have a non-progressive postobstetric genital prolapse characterised by mild pelvic relaxation and little if any symptoms [14]. This lesion may remain non-progressive and may not require repair. As most of our sample had a

mild prolapse, it is fair to conclude that the majority had this type of prolapse. This type clearly does not represent a health or social problem. So, for the sake of community diagnosis, our question about genital prolapse is an effective tool for community diagnosis of this problem. The low specificity of women's report of symptoms and the diagnosis of UTI despite the high sensitivity means that underreporting is a probability. Therefore, the combination of self-report of symptoms of UTI and urine analysis is important. Similar findings were reported in the combined analysis by Koenig et al. [11] in India. On the other hand, most authorities agree that women with asymptomatic bacteriuria do not need treatment unless they are pregnant or have renal scarring resulting from multiple attacks of renal infection [15]. A study that needs to follow only symptomatic bacteriuria can rely on the self-report alone.

Conclusion

The findings indicate that self-report of vaginal discharge coupled with clinical examination could be used in community diagnosis of RTI. Self-report of symptoms of vaginal prolapse could also be used for community diagnosis of genital prolapse. A urinary culture should supplement self-reports of symptoms of UTI to enhance specificity, although the presence of a positive culture in the absence of symptoms is of no clinical significance in non-pregnant women or women without renal disease.

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