Knowledge, attitudes and intended behaviours towards HIV testing and self-protection: a survey of Omani pregnant women

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المعرفة بفيروس العَوَز المناعي البشري، والمواقف منه، والسلوكيات التي يُنوَى اتخاذها تجاهه، والحماية الذاتية منه: مسح لنساء حوامل في عُمان

علي الجابري، رندة يوسف، صدقي حسون، عبد الله بالخير، محمد البلوشي، منى السعدون، مريم ماثيو، سميرة المحروقي، إلياس سعيد، كريستال كوه، محمد إدريس

الخلاصة: لقد تم إدخال اختبار فيروس العَوَز المناعي البشري الروتيني لجميع النساء الحوامل في عُمان دون معرفة مسبقة لمواقف النساء تجاه الاختبار أو لسلوكهن في حال ظهور اختبار إيجابي. وقد تطوعت لهذه الدراسة 1000 امرأة عمانية حامل من عيادات ما قبل الولادة لاستكشاف معرفتهنَّ بفيروس العَوَز المناعي البشري/ الإيدز، ومواقفهن تجاه التحرّي عنه، والسلوكيات التي ينوين اتخاذها في حال ظهور اختبار إيجابي. فكان انتقال الفيروس من الأم إلى الطفل معروفاً من قبل 86.6٪ من النساء، لكن 21.0٪ فقط عرفنَ أنه يمكن توقيه، وقلة منهن اعترفنَ بالدور الهام للأدوية المضادة للفيروسات. وذكرت نصف النساء (51.9٪) أنهن خضعن لاختبار فيروس العَوَز المناعي البشري، ووافقت 75.8٪ منهن على إجراء الاختبار بشكل روتيني لجميع النساء الحوامل. وقد ترافق مستوى المعرفة الأعلى – إلى حد كبير – مع النية في اتخاذ سلوك إيجابي فيما يتعلق بالفحص الطوعي والإفصاح عن الإصابة والتماس المساعدة المهنية في حال ظهور اختبار إيجابي لفيروس العَوَز المناعي البشري. وقد تمَّت مناقشة النتائج فيما يتعلق باتباع نهج التقيد بالفحص الطوعي خلال فترة الحمل أو نهج استبعاده.

ABSTRACT Routine HIV testing of all pregnant women in Oman has been introduced without prior knowledge of women's attitudes towards testing or their behaviour in the event of a positive test. This study recruited 1000 Omani pregnant women from antenatal clinics to explore their knowledge of HIV/AIDS, attitudes towards HIV testing and intended behaviours in the event of a positive test. Mother-to-child transmission was recognized by 86.6% of the women but only 21.0% knew that it was preventable and a few acknowledged the important role of antiviral drugs. Half of the women (51.9%) reported having been tested for HIV and 75.8% agreed about routine HIV testing for all pregnant women. A higher level of knowledge was significantly associated with a favourable intended behaviour related to voluntary testing, disclosure and seeking professional assistance in the event of a positive HIV test. The results are discussed in relation to opt-in and opt-out approaches to voluntary testing during pregnancy.

Connaissances, attitudes et comportements souhaités concernant le dépistage du VIH et l'autoprotection : une enquête auprès de femmes enceintes omanaises

RÉSUMÉ Le dépistage systématique du VIH chez toutes les femmes enceintes a été introduit à Oman avant de connaître l'attitude des femmes vis-à-vis du dépistage ou leur comportement dans le cas où leur test serait positif. L'étude a recruté 1000 femmes enceintes omanaises dans des cliniques prénatales, afin d'analyser leur niveau de connaissances sur le VIH/sida, leurs attitudes vis-à-vis du dépistage du VIH et les comportements souhaités en cas de test positif. La transmission de la mère à l'enfant était reconnue par 86,6 % des femmes mais seulement 21,0 % savaient qu'elle était évitable, tandis que quelques-unes connaissaient le rôle important des médicaments antirétroviraux. La moitié des femmes (51,9 %) ont déclaré avoir déjà effectué un test de dépistage du VIH et 75,8 % étaient en faveur du dépistage systématique du VIH chez toutes les femmes enceintes. Un niveau de connaissances élevé était significativement associé à un comportement souhaité favorable en ce qui concerne le dépistage volontaire, la communication des résultats et la recherche d'une assistance professionnelle dans le cas d'un résultat positif. Les résultats à l'étude sont examinés par rapport aux stratégies de dépistage avec consentement préalable explicite et avec consentement implicite dans le cadre du dépistage volontaire pendant la grossesse.

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Introduction

Women represent almost half of the cases of HIV/AIDS worldwide (*1*). The global epidemiology of HIV in children reflects that of HIV in women (*2*). Mother-to-child transmission is the major route of HIV infection among children and a source of almost all AIDS cases in children in many countries (*3–5*). Approximately 15–25% of infants of HIV infected mothers are infected during pregnancy or during delivery, and around 5–20% of them are infected during breastfeeding (*6*).

A current estimate of the number of people living with HIV/AIDS in Oman is lacking; however, a total of 1371 cases alive were reported as of December 2011 (*7*). Despite this low number of cases alive, Oman has demonstrated a commitment to the prevention of HIV/AIDS and has succeeded in exerting maximum control on HIV transmission via blood, blood products and sharps in health-care settings. The National AIDS Control Programme in Oman has adopted a combination of strategies including public education and voluntary testing and counselling followed by the standard treatment including measures for preventing mother-to-child transmission (*7*). In 2005 less than 50% of women in the reproductive age group had the correct information about HIV/AIDS (*8*). The 2008 national survey revealed that only 2% of women attending for antenatal care opted for voluntary testing and more than 30% of women who were advised to have HIV testing refused to be tested (*9*). The national response strategy to HIV/AIDS was extended to the integration of HIV testing into antenatal care services in 2009 at a cost of US $2.5 million, which was viewed as a critical step in halting the spread of AIDS (*7*). Such an approach resulted in the testing of 99.4% of the women attending for antenatal care between January 2010 and December 2011 (*7*). A positive HIV result in a woman warrants the initiation of antiretroviral therapy for long-term treatment and interruption of transmission of HIV infections to infants and young children (*2*).

Public health policies aimed at the protection of women and their children from HIV infection requires understanding of women's awareness of the risks and the available interventions that enable them to make informed choices. Routine testing of all pregnant women in Oman has been introduced without prior knowledge of women's attitudes towards testing and their intended behaviours in the event of a positive test. It has also raised ethical concerns regarding the violation of women's right to opt out of testing. This study of Omani pregnant women aimed to investigate their knowledge about HIV/AIDS, attitudes towards HIV testing and intended behaviours if HIV/AIDS were suspected or confirmed.

Methods

Study design and sample

A cross-section survey targeting Omani pregnant women was conducted between 2011 and 2012 in 8 out of the 11 administrative regions with the largest population sizes.

The sample size was estimated using the open-access *Epi-Info* program (*10*), based on the number of women of reproductive age (15–49 years; N = 600 868), as per 2010 population estimates (*11*). To obtain the largest sample size, it was assumed that 50% of women have knowledge of mother-to-child transmission with a chosen 5% degree of precision, a design effect of 2.5 to compensate for complex sampling and 95% level of confidence. The estimated minimum sample size was 960 women and was allocated proportional to the size of the target population in each region. As coverage with antenatal care services in Oman is 99% (*9*), women were recruited from antenatal care clinics in the main 20 hospitals and health centres in these regions. Health-care facilities were visited daily and all eligible women were recruited until the desired sample size was reached.

Ethical clearance was obtained from the ethics committee of the College of Medicine and Health Sciences, Sultan Qaboos University. Women were briefed about the purpose of the study and requested to sign an informed consent. Refusal and non-response were not reported. At the end of the interview participants were provided with a specially designed educational leaflet about HIV/AIDS counselling and testing.

Data collection

Data were collected by a trained female researcher using a predesigned and pretested questionnaire interview with closed-ended responses. The collected data included: the woman's attributes (including age, education attainment, employment and family income); attitude towards testing for HIV; knowledge about groups at high risk of infection (including people who inject drugs, sex workers and women having sex with an infected partner); knowledge about routes of HIV transmission and the manifestations of AIDS; and intended behaviour in the event of discovering a probable or actual infection of her husband and of herself.

A total of 16 questions were used to determine women's knowledge about HIV transmission (9 questions) and AIDS manifestations (7 questions). Each question had 3 responses: yes, no and uncertain. A knowledge scale was developed after testing for internal consistency (α = 0.75) by assigning a score of 1 for each correct response and a score of 0 for each incorrect or uncertain response.

The total scores were computed by summing the score of the 16 questions and were expressed as percentages of the maximum scores.

Data analysis

The data were analysed using *SPSS*, version 19, and presented as percentages as well as mean and standard error (SE) of the mean. The Student *t*-test and 1-way analysis of variance (*F*-test) were used for testing the significance of the results at the 5% level.

Results

Women's attributes

The study included 1000 Omani women between the age of 18 and 48 years [mean age 28.9 (SE 5.14) years]. A few women were illiterate (1.1%) or just able to read and write (1.8%) while the majority had received school education (51.1%), a diploma certificate (22.5%) or a university or higher degree (23.5%). At the time of the survey, 49.9% were housewives while the remaining women were employed in the government (43.1%) or private sectors (5.4%) or were self-employed (1.6%).

Nearly half of the women (44.8%) had been married for more than 5 years and 41.3% had 3 or more children. The majority of the women (90.0%) were living with their husbands and only 12.5% reported that their husbands frequently travelled. Based on family income, more than three-quarters of the women reported an average (52.3%) or above average (27.3%) family income while 2.2% reported high or very high income.

Knowledge about HIV/AIDS

Almost all of the women (95.5%) had heard about HIV/AIDS. The main sources of HIV/AIDS information were at school during their school years (37.8%) and the mass media (33.9%). The remaining proportion of women (28.3%) had acquired their knowledge about AIDS from their social network.

Almost all the women had correct knowledge about the possibility of acquiring HIV infection by sexual contact (97.1%), blood transfusion (95.9%) and contaminated syringes (91.4%). However, a proportion of women reported that the disease is transmitted by kissing (40.0%), casual contact such as hugging and handshakes (26.4%) and sharing food and drinks (19.4%) (Table 1).

Table 1 reveals that 86.6% of the women knew that HIV can be transmitted from the mother to the fetus, either prior to delivery (42.0%), during delivery (19.2%) or prior and during delivery (27.8%). Only 21.0% (n = 181) of these women knew that

Table 1 Women's knowledge about transmission of HIV and manifestations of AIDS

Women's knowledge	Yes		No		Uncertain	
	No.	%	No.	%	No.	%
Mode of transmission						
Sexual contact	971	97.1	12	1.2	17	1.7
Blood transfusion	959	95.9	10	1.0	31	3.1
Contaminated syringes	914	91.4	18	1.8	68	6.8
Mother to fetus	866	86.6	38	3.8	96	9.6
Breastmilk	459	45.9	214	21.4	327	32.7
Kissing	400	40.0	408	40.8	192	19.2
Casual contact	264	26.4	657	65.7	79	7.9
Kissing of infants	224	22.4	548	54.8	228	22.8
Food and drinks	194	19.4	727	72.7	81	8.1
Population group at risk						
People who inject drugs and sex workers are at risk	866	86.6	41	4.1	93	9.3
Woman is infected if husband is infected	514	51.4	348	34.8	138	13.8
Manifestation of AIDS						
Impaired immunity	850	85.0	11	1.1	139	13.9
Weakness/lethargy	793	79.3	16	1.6	191	19.1
Weight loss	703	70.3	46	4.6	251	25.1
Frequent skin eruption/blisters	636	63.6	56	5.6	308	30.8
Herpetic eruptions	467	46.7	50	5.0	483	48.3
Chronic diarrhoea	453	45.3	88	8.8	459	45.9
Chronic cough	359	35.9	119	11.9	522	52.2

mother-to-child transmission is preventable and less than half of the latter (n = 82; 45.3%) knew that HIV transmission can be prevented by antiviral drugs. Less than half (45.9%) reported that HIV can be transmitted from the mother to the infant through breastmilk and 22.4% reported that HIV can be transmitted from the mother to the infant through kissing.

The majority of the women (86.6%) recognized that sex workers and people who inject drugs are at high risk of contracting HIV and 51.4% stated that a woman can be infected if her husband were infected (Table 1).

More than two-thirds of the women (68.7%) knew that HIV/AIDS could not be recognized simply by looking at a person. High proportions of the women also knew that HIV/AIDS is manifested by impaired immunity (85.0%), weakness and lethargy (79.3%), loss of weight (70.3%) and frequent skin eruptions (63.6%). Less frequently recognized manifestations of HIV/AIDS were herpetic skin eruptions (46.7%), chronic diarrhoea (45.3%) and chronic cough (35.9%) (Table 1).

A proportion of women had no knowledge about the time elapsed between HIV infection and the development of AIDS (41.5%) and the outcome of the disease (24.5%). The remaining proportions estimated that the development of AIDS is within 1 year (9.9%), between 1–5 years (21.2%) and between 5–10 years (21.0%) after the initial infection. Only 6.4% stated that AIDS can occur more than 10 years after the initial infection with HIV. In respect to the outcome of the disease, 36.1% of the women reported that there is no available treatment and 39.4% stated that AIDS has no cure.

The mean of score of women on the HIV/AIDS knowledge scale was 65.0% (SE 0.6). Their level of knowledge about the transmission of HIV [72.3% (SE 0.6)] was higher than that of AIDS manifestations [57.4% (SE 0.9]. Table 2 shows the mean scores of women's combined knowledge of HIV transmission and AIDS manifestations in relation to their attributes. Significantly higher scores were found among women who had received a diploma, a university or postgraduate degree (P < 0.001) and those who were ever employed (P < 0.001). Significantly higher scores were also observed among women who rated their income as above average or high (P = 0.001). No significant differences in the mean scores were observed in relation to women's age (P = 0.173) or duration of marriage (P = 0.971).

Testing for HIV

More than half of the women in this study (51.9%) reported that they had been tested for HIV and 36.0% of those who had not been tested expressed a desire to know their HIV status. A favourable response towards

Table 2 Women's mean scores on knowledge of HIV transmission and manifestations of AIDS in relation to their characteristics

Women's characteristics	No. of respondents	Mean score (SE)	Median score	*P*-value
Age (years)				
< 25	197	64.0 (1.3)	65.9	0.173
25–< 35	658	65.7 (0.8)	69.8	
≥ 35	145	62.5 (1.7)	65.9	
Duration of marriage (years)				
< 2	243	65.0 (1.2)	67.5	0.971
2–5	309	65.1 (1.1)	69.1	
> 5	448	64.7 (1.0)	68.3	
Family income				
Low/below average	182	60.4 (1.5)	63.5	0.001
Average	523	63.8 (0.9)	67.5	
Above average/high	295	69.5 (1.0)	73.0	
Education				
Never been to school	29	54.1 (3.9)	56.4	0.001
School education	511	59.1 (0.9)	61.9	
Diploma/university degree	460	72.0 (0.7)	74.6	
Employment				
Employed	518	66.9 (0.8)	70.6	0.001
Unemployed	482	62.7 (1.0)	67.5	

SE = standard error of the mean.

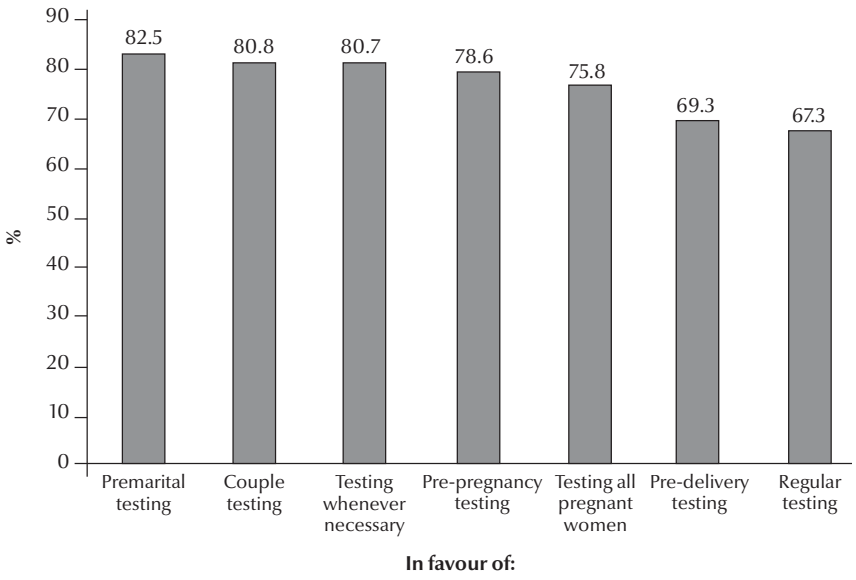

Figure 1 Women's attitudes towards testing for HIV (*n* = 1000)

routine testing for HIV was given by 75.8% of the women, and 80.7% agreed that testing for HIV should be considered whenever necessary. Between 75.0% and 82.5% of women agreed with premarital testing, couple testing, pre-pregnancy testing and testing of all pregnant women. Lower proportions of women agreed with pre-delivery testing (69.3%) and regular and continuous testing (67.3%) (Figure 1).

The majority of women (91.6%) had a preference regarding the protocol for testing for HIV. The preference of 62.5% of these women was for voluntary testing while the preference of the remaining proportion was for routine testing (25.8%) and group testing (11.7%).

Attitudes and intended behaviours

Table 3 shows women's attitudes towards testing and intended behaviours in the event of a probable or actual infection of their husbands with HIV, in relation to their knowledge scores. In the event of a suspected infection of the husband, the intention of 93.0% of women would be to go for couple testing, while 51.2% would seek testing alone. In reference to marital relations, 65.9% of the women would ask their husband to use a condom and only 15.7% said they would maintain sexual relations with their husbands. The intention of 43.1% of the women was to remain in the marriage. Willingness to disclose the event was expressed by 80.0% of the women. In the event of actual infection of the husband, 91.0% of the women agreed that they would seek medical assistance. Lower proportions would seek psychotherapy (63.1%) or assistance from people in their social network (53.5%). The intention of 50.0% of the women was to continue their pregnancy. Table 3 shows that the mean knowledge score was significantly higher among women who agreed with routine testing of all pregnant women and those who expressed favourable intended behaviours in the event of probable or actual infection of the husband.

In the event that the woman herself was HIV-infected, the intention of a large proportion of the Omani women was to consult a physician (88.8%) and to disclose their status to their husbands (86.5%). Lower proportions would disclose their status to their relatives (60.1%) or others in their social network (21.8%). The intention of 71.0% of the women was to discontinue breastfeeding and 88.1% said that they would not have more children. Significantly higher scores on knowledge of transmission and manifestations of HIV were observed among women who expressed an intention to inform their husbands ($P < 0.001$), discuss their status with the physician ($P < 0.001$), discontinue breastfeeding ($P = 0.015$) and not have any more children ($P < 0.001$). The knowledge scores of women who would disclose and discuss their HIV status with relatives and others in their social network was not significantly higher than those who did not express the same intention (Table 3).

Discussion

This study focused on women of reproductive age because of their vulnerability to HIV/AIDS. The Global AIDS Response Progress report for Oman for the year 2012 revealed that half of the HIV/AIDS cases among Omanis were acquired through heterosexual transmission and that woman represented 28.8% of the cases (7). In this respect, we can expect that women will play a pivotal role in protecting themselves and their unborn children, provided they have the knowledge and means to prevent infection (1).

The mean overall score on the knowledge scale (65.0%) reflects an unsatisfactory level of knowledge among women of reproductive age in Oman. However women's level of knowledge about modes of transmission of HIV was higher than their level of knowledge of AIDS manifestations. In fact, more than 90% of women had knowledge about transmission of HIV by sexual contact, intravenous injection of illicit drugs and blood transfusion. This was expected, as there have

Table 3 Women's mean scores on knowledge of HIV transmission and AIDS manifestations in relation to their attitudes toward testing and their intended behaviours (n = 1000)

Attitudes and intended behaviours	Yes			No or Uncertain			P-value
	% of respondents	Mean score (SE)	Median score	% of respondents	Mean score (SE)	Median score	
Testing for HIV							
Testing of all pregnant women	75.8	67.0 (0.7)	70.6	24.2	58.2 (1.4)	61.9	0.001
Husband is probably infected							
Couple testing	93.0	66.1 (0.6)	69.8	70.0	49.0 (3.0)	52.8	0.001
Testing alone	51.2	66.5 (0.8)	69.1	48.8	63.2 (0.9)	67.5	0.009
Maintain sexual relations with husband	15.7	71.7 (1.4)	76.2	84.3	63.6 (0.7)	67.5	0.001
Ask husband to use condom	65.9	68.7 (0.7)	70.6	34.1	57.5 (1.2)	60.3	0.001
Won't ask for divorce	43.1	67.5 (0.9)	70.6	56.9	62.9 (0.9)	67.5	0.001
Won't maintain secrecy	80.0	66.2 (0.7)	69.1	20.0	59.4 (1.7)	65.5	0.001
Husband is actually infected							
Seek medical assistance	91.0	66.1 (0.6)	69.1	90.0	52.3 (2.6)	54.8	0.001
Seek psychotherapy	63.1	68.2 (0.7)	70.6	36.9	59.1 (1.1)	61.9	0.001
Seek assistance of others	53.5	66.8 (0.8)	70.6	46.5	62.7 (1.0)	65.9	0.001
Continue with the pregnancy to term	50.0	67.3 (0.8)	70.6	50.0	62.5 (0.9)	67.5	0.001
Woman is infected							
Discuss with physician	88.8	65.9 (0.6)	69.1	11.2	57.1 (2.2)	60.3	0.001
Inform husband	86.5	66.1 (0.6)	69.1	13.5	57.3 (2.1)	60.3	0.001
Discuss with relatives	60.1	65.4 (0.8)	69.1	39.9	64.1 (1.0)	67.5	0.330
Discuss with others	21.8	66.0 (1.2)	70.6	78.2	64.6 (0.7)	67.5	0.337
Discontinue breastfeeding	71.0	65.9 (0.7)	69.1	29.0	62.5 (1.3)	67.5	0.015
Don't wish to have more children	88.1	66.1 (0.6)	69.1	11.9	55.6 (2.2)	60.3	0.001

SE = standard error of the mean.

been educational campaigns across Oman to raise public awareness about the means of HIV/AIDS prevention and these have emphasized risky behaviours and modes of transmission. A higher level of knowledge was noted among women belonging to the more affluent stratum of society, indicated by better education, employment and higher income. Information, education and communication activities should target less privileged women via mass media as a source of information.

In this study, 86.6% of women were aware of the vertical transmission of HIV from the mother to the child during pregnancy and labour. However, only a small proportion of these women were aware that it is preventable and few acknowledged the role of antiviral drugs in this respect. Furthermore, less than half of the women knew that the virus can be transmitted through breastfeeding. Poor knowledge in these areas has been reported among women of reproductive age in the Islamic Republic of Iran (*12*), Ethiopia (*13*) and Nigeria (*14*). Lack of knowledge was shown to be a barrier to women taking appropriate actions for the prevention of mother-to-child transmission, as a higher level of knowledge in this study was associated with desirable intended behaviours related to testing and maintaining healthy sexual relations. Measures such as discontinuation of breastfeeding and abstaining from having more children were reported by women with higher levels of knowledge because of their awareness of the associated risks. However, it reflects as well their lack of knowledge that this intended behaviour is not necessary if effective interventions for preventing mother-to-child transmission are introduced.

Increasing the availability and acceptability of HIV testing and counselling services will no doubt encourage more women to know their status, providing a gateway to preventing mother-to-child transmission (*15*). Half of the women in this study had been tested, a figure which is lower than the 99.4% reported by the Omani Ministry of Health for the period 2010–2011 (*7*). This discrepancy may be due to the fact that the index visit was the first for a proportion of these women and they were interviewed while waiting to be seen by their physician. Also, it is not unlikely that a proportion of women were not aware that they had been tested. Almost a third of women who were not tested expressed a willingness to know their HIV status and a substantial proportion of them expressed favourable attitudes towards premarital testing for HIV as well as testing prior to or during pregnancy. For many women, particularly in resource-poor areas, pregnancy may be the only time in their young adult lives when they have regular access to health-care services. The integration of HIV testing into antenatal services is critical for the scaling up of interventions to prevent mother-to-child transmission (*16–18*). Testing is an opportunity for counselling HIV-negative women about ways of protecting themselves and their infants (*15,19*). HIV-positive women will benefit from an intervention package of antiretroviral treatment and from caesarean delivery, as well as counselling and support regarding breastfeeding options (*20–22*). More than a third of women in this study were not aware of the existence of medications for the treatment of HIV/AIDS, despite the fact that the currently available antiretroviral drugs have changed the picture of AIDS from a fatal and deadly disease to a manageable illness (*23*). The introduction of combination antiretroviral therapy early in the course of pregnancy suppresses viral replication, with subsequent reduction of perinatal transmission to less than 1% (*4*).

The previous recommendation of the Centers for Disease Control and Prevention for voluntary antenatal HIV testing of pregnant women has been criticised by those who advocate routine testing for preventing mother-to-child transmission (*24*). The universal "opting out" testing of all pregnant women has proved to be superior to the voluntary "opting in" testing and counselling in identifying more HIV-positive pregnant women and bringing them into care (*25*). However, Field and Kaplan (*26*) and Bulman et al. (*27*) have cautioned that the opting out approach may raise ethical concerns if women's informed consent is violated, as the increase in the rate of testing is achieved at the expense of women's knowledge that the test is optional (*26*) and marginalizing their right to refuse (*27*). Although voluntary testing was the preference of nearly two-thirds of women enrolled in this study, more than three-quarters of them accepted the routine testing of all pregnant women initiated by the Public Health Directorate at the Ministry of Health in Oman. It has been proved that the opting out approach to HIV testing is more acceptable and less stigmatizing (*28*). The Public Health Directorate should achieve a balance between missed preventive opportunities and violation of women's rights to refusal by intensification of educational activities targeting women of reproductive age and by providing pre-testing counselling.

Currently the global goal has shifted from prevention of mother-to-child transmission to the elimination of mother-to-child transmission by 2015 (*29*), which is a realistic goal (*5*) provided effective interventions are in place (*30*). The infection rates among infants born to infected mothers have dropped significantly as a result of the high rates of coverage with antiretroviral prophylaxis

(2), which range between 50% and 80% in sub-Saharan Africa and exceed 80% in Botswana, Namibia, South Africa and Swaziland (5). It is too early to determine the effect of routine HIV screening of pregnant women that was implemented in Oman in 2009.

The main limitation of this study was that it reflected women's attitudes towards testing and intended behaviour rather than their positions when providing consent for testing and their actual behaviours in the event of a positive test.

Future research in this area should focus on evaluation of the HIV programme's impact on women's knowledge and attitudes towards HIV screening as well as its outcome in terms of the number of HIV-positive women identified and the number of HIV infections prevented among infants.

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