

Knowledge, attitudes, beliefs and practices in Lebanon concerning HIV/AIDS, 1996–2004

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المعارف والمواقف والمعتقدات والممارسات حول الإيدز والعدوى بفيروسه في لبنان 1996 – 2004
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الخلاصة: استهدفت هذه الدراسة الشاملة للقطاعات تقييم أثر التدخلات الوقائية من فيروس الإيدز في لبنان منذ عام 1996. وقد أجريت هذه الدراسة بين شهري كانون الثاني/يناير 2004 وتموز/يوليو 2004 وشملت 3200 من اللبنانيين الذين تتراوح أعمارهم بين 15 و49 عاماً. ومن بين المشاركين ذوي النشاط الجنسي كان لدى 13% من الرجال و2.6% من الإناث علاقات مع قرين آخر غير الزوج، إلا أن 25% منهم فقط استخدموا العازل الذكري في آخر جماع لهم. على جانب آخر، كان لدى 16.8% علاقات جنسية عابرة، وأن 71.7% من هؤلاء استخدموا العازل الذكري. وقد تراجعت المعلومات حول الممارسات الوقائية من الإيدز والعدوى بفيروسه عما كانت عليه عام 1996 (94.9%) لتصل إلى 85.7%. أما الإبلاغ الذاتي عن الأعراض التي تشير إلى الأمراض المنقولة جنسياً فقد أصبح 9.1% مقارنةً بما كان عليه عام 1996 (5.6%).

ABSTRACT This cross-sectional study, aimed at evaluating the impact of HIV prevention interventions in Lebanon since 1996, was performed between January 2004 and July 2004 on 3200 Lebanese aged 15–49 years. Of the sexually active respondents, 13.0% of men and 2.6% of women had regular partners other than the spouse but only 25.0% used a condom in their last sexual intercourse. However, 16.8% had sex with casual partners and 71.7% of those used a condom. Knowledge about preventive practices against HIV/AIDS has regressed since 1996, 85.7% compared to 94.9%. Self reports of symptoms suggestive of sexually transmitted disease were 9.1% compared to 5.6% in 1996.

Connaissances, attitudes, croyances et pratiques au Liban à propos du VIH/sida de 1996 à 2004

RÉSUMÉ Cette étude transversale, qui visait à évaluer l'impact des interventions de prévention du VIH au Liban depuis 1996, a été réalisée de janvier à juillet 2004 sur 3 200 Libanais âgés de 15 à 49 ans. Parmi les personnes sexuellement actives interrogées, 13,0 % des hommes et 2,6 % des femmes avaient régulièrement d'autres partenaires que leur conjoint, mais seulement 25,0 % avaient utilisé un préservatif au cours de leur dernier rapport. Par ailleurs, 16,8 % avaient des rapports avec des partenaires occasionnels et 71,7 % d'entre eux utilisaient un préservatif. Les connaissances relatives aux pratiques de prévention contre le VIH/sida ont diminué depuis 1996, en passant de 94,9 % à 85,7 %. Le pourcentage de personnes déclarant présenter des symptômes évocateurs d'une maladie sexuellement transmissible était de 9,1 %, contre 5,6 % en 1996.

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Introduction

Background

Worldwide, up to the end of 2002, the human immunodeficiency virus (HIV) had infected approximately 67 million people. More than 25 million have already died from acquired immunodeficiency syndrome (AIDS) (about 3.1 million deaths in 2002 alone, including 610 000 children), ranking it as one of the leading causes of death. The remaining 42 million have been living with HIV infection or AIDS [1].

In the World Health Organization Eastern Mediterranean Region, an estimated 700 000 people are living with HIV/AIDS, but only 14 198 AIDS cases have been officially registered since the start of the epidemic [2]. Complete data were lacking for 11 of the 22 countries of the Region for 2003. Based on available figures, the Regional epidemic is being driven largely by heterosexual transmission, which represents almost 80% of the cumulative total of AIDS cases reported.

In Lebanon, the first reported AIDS case was in 1984 [3]; the number steadily increased to 765 reported cases by July 2004 [4]. Although a significant proportion of these (around 45%) were linked to travel and migration to (and return from) endemic areas, local spread had become a reality. The most frequent mode of transmission was sexual (77.25%), mainly heterosexual (52.70%) [4].

The highest number of cases was in the age group 31–40 years, with a ratio of men:women of 8.5:1 [4]. The majority of the cases reported to the National AIDS Programme (NAP) were increasingly at the stage of AIDS disease rather than asymptomatic HIV infection. This indicates that the individuals probably acquired the infection at a younger age, yet had not been tested for HIV until they were symptomatic. Moreo-

ver, an increasing trend of new reports of HIV and AIDS cases was noticed within the younger population (15–29 years) compared to a horizontal trend in the other age groups.

As a national response to the epidemic, the Lebanese government declared in 1988 that HIV/AIDS was a threat to public health, and in 1989 the NAP was established. It primarily performed activities based on short-term action plans in accordance with the local epidemiological situation; needs assessment; knowledge, attitudes, beliefs and practice studies; and World Health Organization directives [5].

Interventions

In July 1994, a consensus workshop formulated a medium-term plan that set priorities for NAP activities for 1995–2000 [6]. It identified target groups, described barriers and proposed solutions and intervention priorities. These interventions were:

- promoting safe sex,
- promoting condom use and increasing availability,
- promoting safe behaviour to avoid sexually transmitted diseases,
- promoting the application of universal precautions in the health centres,
- promoting and controlling the safety of blood,
- increasing awareness on the risks of HIV transmission among the intravenous drug users,
- providing support and care to persons infected with HIV/AIDS and their families,
- conducting research targeting groups that are at a higher risk of HIV transmission.

For the implementation of the above, the NAP developed awareness campaigns and support materials. It organized advocacy campaigns through community participation and capacity-building. Along with the Infectious Diseases Society, it developed protocols for disease management, updated on a yearly basis. In addition, several acts or mandates related to HIV control were put into laws or decrees, e.g. those related to the safety of blood, mandatory declaration, confidentiality, non-discrimination, compulsory testing of high-risk groups (e.g. female sex workers) and work permits for foreigners.

Assessment

In 1996, an assessment study on knowledge, attitudes, beliefs and practices (KABP) of the general population in Lebanon showed almost universal awareness of HIV/AIDS (95.5%) [5].

The present study is an evaluation of the HIV/AIDS indicators and makes comparisons with those measured in 1996. It is a re-assessment among the general population of:

- trends of change in risky practices,
- knowledge of modes of transmission,
- knowledge of preventive practices,
- prevalence of risky sexual behaviours,
- incidence of self-reported sexually transmitted disease (STD) symptoms.

Methods

Sample population

This cross-sectional study was conducted on a representative sample of 3200 participants from Lebanon aged 15–49 years.

Using Altman's nomogram for sample size calculation yields a sample size of 3200 for a power between 70 and 80, a standard-

ized difference of 10 and a significance level of 0.1

This survey was carried out during the period January 2004–March 2004 using a stratified cluster sample design. The country was first stratified by governorate (*mohafazat*) and district levels in order to select the primary sampling units. Once these were identified, they were subdivided into clusters, and then by systematic random sampling, households were selected for interviewing. Sample size in each governorate was proportional to the population.

All persons aged 15–49 years were included whether they were regular residents of the household or had spent the night before the interview in the household. Regular household members who were temporarily away from home were included as household members and interviewed during a later visit.

Survey instrument and data collection

The survey instrument was a questionnaire that was adapted and adopted for repeated survey of the general population as described in *Evaluation of a national AIDS programme: a methods package* [7]. It consisted of 2 parts, Part A, the household schedule, the purpose of which was to identify all persons eligible for the individual interview and Part B, the individual questionnaire for men and women aged 15–49 years. This was divided into 8 sections: (1) identification and demographic data, (2) background characteristics, including source of information on health issues and media, (3) marriage and regular partners, (4) non-regular commercial sex, (5) condoms, (6) STDs and health issues (divided into 2 parts, one for men only and the second for women only), (7) knowledge of AIDS, (8) risk perception, behaviour change and attitudes to persons with HIV/AIDS.

The average time taken to complete each questionnaire was 20–25 minutes. The questionnaire was used as a verbatim instrument after translation into Arabic and being pre-tested on 100 people.

The interviewers worked in teams of 1 male and 1 female in addition to the supervisor. Male respondents were interviewed by men and female respondents by women.

Results

Population characteristics, sample validity and sampling

The sample consisted of 3200 respondents; 58.6% (1876) were males, giving an overall male/female ratio of 1.4.

The average number of respondents per household (2.2) was low: in many cases, after 1 person in the family answered the questions and discovered that they were very sensitive and touched on very personal issues, the rest of the family apologized for not continuing. It was estimated by supervisors and interviewers that around 15% in the cities and up to 25% elsewhere refused to participate in the study despite the anonymous nature of the exercise. However, the overall response rate per household was better than the 1.41 reported in 1996.

The sample represents well a relatively young population: 64.5% were < 35 years old (Table 1). The great majority, 96.0% (3073), had attended school, however, 10.7% (343) had attended only primary school, so if literacy is considered as being educated beyond primary school, then 14.7% would be considered illiterate (comparable to the illiteracy rate often reported for Lebanon, i.e. about 10%–15%), mostly in the age category 45–49 years. These rates were similar to those in the 1996 survey. However, a higher percentage of people, 7.1% compared to 6.3% in 1996, reported that they could not read (Table 2).

Table 1 Marital status and sex, age and education level of respondents, 2004

Characteristic	Total		Married	
	No.	%	No.	%
Total ^a	3200	100.0	760	23.8
Sex				
Male ^b	1876	58.6	503	26.8
Female ^c	1324	41.4	257	19.4
Age (years)				
15–24	1040	32.5	43	5.7
25–34	1024	32.0	255	33.6
35–44	768	24.0	294	38.7
45–49	368	11.5	168	22.1
Education level				
No school	127	4.0	37	29.1
Primary	343	10.7	125	36.4
Complementary ^d	795	24.8	240	30.2
Secondary	786	24.6	176	22.4
University student	286	8.9	1	0.3
University graduate	863	27.0	181	21.0

^a1996: 1504 (100.0%) and 581 (44.2%) respectively.

^b1996: 760 (50.5%) and 243 (32.0%) respectively.

^c1996: 744 (49.5%) and 338 (45.4%) respectively.

^dAge 14–16 years.

Media and information on health issues

The highest daily rate for media use was for TV, 97.6%. Health articles or reports proved to be almost equally read in newspapers and magazines, 32.5%, as listened to on the radio, 31.3%, however health reports were mostly watched on TV, 54.4%, and this was considered the best primary source of health information, 33.6% (Table 2).

Marriage and regular partnerships

We found 52.0% of the sample had ever been married compared to 44.2% in 1996 (Table 3). Just under half of those ever married were still married at the time of the study compared to 87.4% in 1996. Females got married earlier than males: 35.6% of females were married before the age of 20 years compared to only 5.0% of males

Table 2 Selected sociodemographic parameters, 1996 and 2004

Variable	1996 (n = 1504)	2004 (n = 3200)		P for 90% CI
	%	No.	%	
<i>Education</i>				
Attended school	97.8	3073	96.0	0.0008
Primary school only	11.6	343	10.7	NS
Low education	14.0		14.7	NS
Cannot read	6.3	277	7.1	NS
<i>Married</i>	44.2	760	23.8	> 0.0001
<i>Mobility^a</i>	5.3		1.3	> 0.0001
<i>Sexually active</i>	63.8		66.8	0.0222
<i>Media daily use</i>				
TV	88.2	3124	97.6	> 0.0001
Radio	63.8	1355	42.3	> 0.0001
Magazines	27.3	594	18.6 ^b	> 0.0001
<i>Health reports</i>				
Read	49.1	996 ^c	33.5	> 0.0001
Listen to	41.8	796 ^d	31.3	> 0.0001
Watch	56.9	1700 ^e	54.4	0.0668
<i>Best source of health information</i>	79.3		54.4	
Television	39.1	1075	33.6	> 0.0001
Newspaper	27.8	522	16.3	> 0.0001
Radio	12.4	144	4.5	> 0.0001
<i>Married < 20 years</i>				
Females	44.2	272 ^f	35.6	–
Males	9.6	45 ^g	5.0	–

^aPeople living ≤ 1 year in the community; ^b20% of literate; ^cn = 2973 newspaper/magazine readers; ^dn = 2543 radio listeners; ^en = 3124 viewers; ^fn = 764; ^gn = 901.

CI = confidence interval; NS = not significant.

(Table 2). The comparable figures for 1996 were 44.2% and 9.6%.

Unmarried respondents comprised 76.2% compared to 61.4% in 1996 (Table 3). Just over half the males 56.3% (1373) were not married, more living in urban areas and more with university education. Early marriage (under age 20 years) was reported more among females (272/764; 33.6%), among whom the higher the level of education the lower the rate of marriage.

Sexual activity was experienced early in life: 36.0% first had sexual intercourse

at ≤ 20 years in 2004 compared to 64.5% in 1996 (Table 4). Among the males, if we include those who were ever married and those who were unmarried but sexually active, in 2004 70.5% of males were sexually active; among females this was 61.6% (Table 5). The corresponding values for 1996 were 73.2% for males and 54.3% for females.

Therefore, a good proportion of sexually active, unmarried young people, mostly males, were engaging in sex with a regular partner (13.0%), multiple partners (19.4%

Table 3 Marriage and partners according to sex (1996 and 2004) and age (2004) in the sexually active participants

Variable	Ever married		Now married ^a		Regular partner apart from spouse		Ever had sex outside regular relationship		Polygamy ^b		Multiple partners ^c		Belief in fidelity of partner ^d		Used condom with partner ^d in last intercourse		Total		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
1996 (n = 1504)																			
Sex																			
Male	280	36.8	243	86.8	168	30.2	276	36.3	10	4.1	57	33.9	311	75.7	136	33.1	760		
Female	385	51.7	338	87.8	17	4.2	19	2.6	7	2.1	3	17.6	270	76.1	48	13.5	744		
Total	665	44.2	581	87.4	185	19.3	295	19.6	17	2.9	60	32.4	581	75.8	184	24.0	1504		
n	1504		839		960		665		581		185		766		766				
2004 (n = 3200)																			
Sex																			
Male	901	48.0	503	55.8	244	18.4	422	22.5	19	3.8	52	21.3	578	77.4	224	30.0	1876		
Female	764	57.7	257	33.6	34	4.2	51	3.9	4	1.6	2	5.9	145	49.8	35	12.0	1324		
Total	1665	52.0	760	45.6	278	13.0	473	14.9	23	3.0	54	19.4	723	69.7	259	25.0	3200		
n	3200		1535		2138 ^f		1665 ^e		760 ^f		278		1038 ^g		1038 ^h				
Age (years)																			
15-24	113	33.4	43	38.1	87	25.7	225	66.6	1	2.3	16	29.6	72	52.2	45	34.6	338		
25-34	541	72.3	255	47.1	118	15.8	207	27.7	8	3.1	30	55.6	240	64.3	93	24.9	748		
35-44	665	94.9	294	44.2	57	8.1	36	5.1	5	1.7	6	11.1	267	76.1	88	25.1	701		
45-49	346	98.6	168	48.6	16	4.6	5	1.4	9	5.4	2	3.7	144	78.3	33	17.9	351		
Total	1665	77.9	760	45.6	278	13.0	473	22.1	23	3.0	54	100.0	723	69.7	259	25.0	2138		

^aAs percentage of ever married.^bAs percentage of now married.^cAs percentage of those having a regular partner (not married).^dSpouse or regular partner.^e901 males, 764 females.^f503 males, 257 females.^gSexually active.^hHave regular partnership; 747 males, 291 females.

of the 278 having regular partners), or casual partners (16.8%) (Tables 3 and 5).

Among those who had a regular partner apart from the spouse, most were educated beyond primary school level. The highest rates of condom use in this group were for students, 36.8% (14 out of 38) and university graduates, 33.7% (87 out of 258) (data not shown).

Younger respondents (< 25 years) who were not married and were sexually active constituted the category that had the highest rate of condom use during their last sexual intercourse, 34.6% (45 of 130 who ever used a condom), and the highest rates of having a regular partner, 25.7% (Table 3) (comparable data from 1996 not available).

Males showed a complete dominance in having sex outside marriage and having multiple partners (Table 3). Using a condom with a regular partner was also much more frequent in males. However, it was evident that the rate of sexual activity, for both non-married and married, was much higher than the rate of condom use.

Casual partners and commercial sex

As shown in Table 5, 16.8% (360 out of 2138) of the sexually active respondents had had casual sex in the previous 12 months in the 2004 survey compared to 22.4% (215 of 960) in 1996. These were predominantly young, urban males, mostly students. Around two-thirds

Table 4 Age of first sexual intercourse in sexually active participants

Age (years)	1996		2004	
	No.	%	No.	%
≥ 10	16	1.7	1	< 1.0
11–14	152	15.8	36	1.7
15–20	451	47.0	711	33.3
21–25	162	16.9	169	7.9
26+	64	6.7	54	2.5
Did not respond	115	12.0	1167	54.6
Total	960	100.0	2138	100.0

Table 5 Casual sex in the previous 12 months according to sex and age of respondent, 1996 and 2004

Variable	Sexually active ^a		Casual sex		Commercial sex		Used condoms		Had sex at first meeting									
	1996	2004	1996	2004	1996	2004	1996	2004	1996	2004								
Sex	No.	%	No.	%	No.	%	No.	%	No.	%								
Male	556	1323	207	37.2	324	90.0	74	35.7	106	32.7	144	69.6	234	72.2	62	30.0	88	27.2
Female	404	815	8	2.0	36	10.0	4	50	7	19.4	5	62.5	24	66.7	2	25	7	19.4
Age (years)	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
15–24	338	1523	338	15.6	128	37.9	28	21.9	28	21.9	78	60.9	29	22.7	29	22.7	29	22.7
25–34	748	1523	748	15.6	152	20.3	57	37.5	57	37.5	116	76.3	44	28.9	44	28.9	44	28.9
35–44	701	1523	701	15.6	60	8.6	17	28.3	17	28.3	50	83.3	15	25.0	15	25.0	15	25.0
45–49	351	1523	351	15.6	20	5.7	11	55.0	11	55.0	14	70.0	7	35.0	7	35.0	7	35.0
Total	960	2138	215	22.4	360	16.8	78	36.3	113	31.4	149	69.3	258	71.7	64	29.8	95	26.4

^aEver married + ever had sex while not married.

(238 of 360) had ≥ 2 partners. Just over 30% of those involved with non-regular partners stated that they gave or received money or gifts in exchange for sex (commercial sex); for 26.4% of these the sexual encounter was during the first meeting.

Age was a prominent factor in casual sex: in 2004 37.9% of the sexually active respondents aged 15–24 years had casual sex and this decreased with age (Table 5). However, the proportion having commercial sex and sex at their first meeting generally increased with age. The corresponding figure for 1996 was 29.8%.

Condom use

Within marriage or regular partnership, the use of condoms at the last intercourse was only 25.0% in 2004, similar to the 23.7% in 1996 (Table 3). Condom use was relatively much lower in the youngest age group (Table 5). Although 84.1% had heard about condoms, only 15.3% overall had used one, which compares unfavourably with the 95.1% and 32.5% respectively in 1996 (Table 6). Compared with the 1996 survey, we noted a decrease in rates for all parameters except for having seen a condom and use with regular and with non-regular partners (Tables 6 and 7).

Sexually transmitted disease

Self reported symptoms of STD (pain during urination or discharge from penis) in the previous 12 months were reported by 12.4% of sexually active males in 2004 (Table 8),

a statistically significant increase compared to 1996 (5.6%) ($P < 0.0001$). They were almost equally distributed between rural 9.9% (68 of 689) and urban 8.4% (53 of 634). A higher number of episodes were reported in those aged ≥ 35 years (Table 8).

Just over 35% of those reporting having symptoms of STD sought professional treatment in 2004, while 15.1% said they did nothing (Table 9); corresponding values for 1996 were 78.5% and 16.7%. Attitude towards partners varied greatly, 37.2% told their partners about their suspected STD and 43.8% took preventive or curative measures (mainly refraining from sexual intercourse) in 2004; this compares poorly with 59.5% and 73.8% respectively in 1996. What aggravated risky behaviour was the presence of recurrent episodes in many cases (19.0% in 2004 and 47.6% in 1996). There were also a number of respondents who had multiple, non-regular sex partners, and condoms were only occasionally used as a protective measure.

Of the sexually active women participating in the study, 13.9% had had a child in the previous 2 years, 92.4% of whom had seen a health worker. This was excellent coverage since 98% of these reported having had an examination of the vagina.

Knowledge of AIDS

Awareness about HIV/AIDS was 98.2% in 2004. Those who were not aware of HIV/AIDS were predominantly non-schooled, female, and lived in the South or the Bekaa.

Table 6 Comparison of condom knowledge, 1996 and 2004

Knowledge item	1996 (n = 1504)		2004 (n = 3200)		P for 90% CI
	No.	%	No.	%	
Heard about condoms	1430	95.1	2692	84.1	< 0.0001
Seen a condom	1071	71.2	2558	79.9	NS
Knowledge of outlets	1355	90.1	2398	74.9	< 0.0001
Used a condom	489	32.5	490	15.3	< 0.0001

CI = confidence interval; NS = not significant

Table 7 Condom use by sexually active participants, 1996 and 2004

Use category	1996			2004		
	Sample size	No.	%	Sample size	No.	%
Used by the sexually active	960	489	50.9	2138	312	14.6
Used with regular partners	778	184	23.7	760	246	32.4
Used with non-regular partners	215	149	69.3	363	257	70.8
Used by those who self report STD symptoms	42	13	31.0	152	22	14.5
Know that condoms protect from HIV	1496	1326	88.6	3141	2743	87.3

STD = sexually transmitted disease.

A comparison of the prevention indicators in Lebanon in 1996 and 2004 is shown in Table 10. Knowledge of preventive practices and condom availability had statistically significantly deteriorated and the rate for self-reported STDs had significantly increased.

Knowledge of valid practices such as staying faithful to one partner, use of clean needles and syringes or using condoms as means of protection from HIV/AIDS had worsened since the 1996 survey and the situation regarding invalid measures had also deteriorated (Table 11). The most common misconception in both surveys was to avoid public toilets. The next most common was to avoid insect bites, 27.7% in 1996 and 27.3% in 2004.

Effect on beliefs, attitudes and lifestyle in people who had heard about HIV/AIDS

Our data showed that 6.8% of the participants knew someone with HIV/AIDS in 2004 (Table 12). Nevertheless, 67.5% perceived no risk of being infected with HIV. Only 1.1% felt they had a good chance of acquiring the infection. Actually, only 24.1% reported having made behavioural changes because of HIV/AIDS, and 20.2% of those had made the changes in the previous 12 months.

The perception of being protected against contracting HIV was greater among females (Table 12). They reported fewer changes in sexual behaviour than males, 19.8% compared to 27.1%, and they were more willing to care for a family member with AIDS: 65.8% compared to 55.2%.

About two-thirds stated that people having HIV/AIDS should be allowed to continue their work and not be discriminated against in the workplace (Table 12). Positive attitudes were not dependent on the respondents' education or area of residence. In contrast, however, only 29.1% believed that HIV positivity should not be revealed. These questions were not included in the 1996 survey, so it was not possible to make a comparison.

Table 8 Self-reported symptoms of sexually transmitted disease in sexually active men in Lebanon during the previous 12 months according to age, 2004

Age (years)	Total	Symptomatic ^a	
	No.	No.	%
15-24	225	26	11.6
25-34	459	45	9.8
35-44	385	57	14.8
45-49	254	36	14.2
25-49	1098	138	12.6
Total	1323	164	12.4

^aPain during urination or discharge from penis.

Table 9 Comparison of attitude and practices in men reporting symptoms of sexually transmitted disease (STD), 1996 and 2004

Variable	1996 (n = 760)		2004 (n = 1323)		P for 90% CI
	No.	%	No.	%	
Self-reported episode of STD	42	5.6	152	11.5	0.0001
<i>Action</i>					
Sought professional treatment	33	78.5	57	37.5	< 0.0001
Recurrent episode	20	47.6	23	15.1	0.0001
Advice of a friend	20	47.6	35	23.0	0.0003
Did nothing	7	16.7	23	15.1	NS
Used self-medication	7	16.7	33	21.7	NS
<i>Attitude to partner</i>					
Took preventive measures	31	73.8	53	34.9	< 0.0001
Informed partner	25	59.5	45	29.6	< 0.0001
Refrained from sexual intercourse	23	54.8	120	78.9	NS
Used condoms	13	30.9	30	19.7	0.0023
Advised partner to have medical consultation	7	16.7	6	3.9	0.0001

CI = confidence interval; NS = not significant.

Discussion

It was clear from the pre-testing stage that we were dealing with a very sensitive issue and that we were exploring the intimate personal life of the respondents. This was reflected in the low average number of respondents per household (2.2). However, the overall response rate was better than the 1.41 per household reported in 1996 [5]. This increased rate may be a result of the increased awareness and perceived risk of the problem among the population.

Many families were young and did not have children in the eligible age group at home. This is evident from the relatively higher numbers in the young age groups in the sample and the higher percentage of marriages in the age group 25–34 years [5].

Media and information on health issues

Health programmes were mostly watched on TV, which was considered the best primary source on health information. There was an overall decrease with respect to

Table 10 Comparison of HIV/AIDS prevention indicators, 1996 and 2004

Indicator	1996			2004			P for 90% CI
	Total	No.	%	Total	No.	%	
Knowledge of preventive practices	1504	1427	94.9	3200	2743	85.7	< 0.0001
Condom availability outside city centre	1504	1355	90.1	3200	2333	72.9	< 0.0001
Condom use with non-regular sex partners	205	145	70.7	361	257	71.2	0.4562
Non-regular sexual partners	825	205	24.8	2138	361	16.9	< 0.0001
Self-reported STD (men)	760	42	5.5	1323	121	9.1	< 0.0001

CI = confidence interval; STD = sexually transmitted disease.

Table 11 Knowledge of HIV prevention methods, valid and invalid

Method	1996 (n = 1496)		2004 (n = 3142)		P
	No.	%	No.	%	
<i>Valid</i>					
Using clean needles for injections	1447	96.7	2702	86.0	–
Staying faithful to one partner	1398	93.4	2747	87.4	–
Using condoms during sexual intercourse	1326	88.6	2743	87.3	–
<i>Invalid</i>					
Avoid public toilets	439	29.3	1028	32.7	0.0001
Avoid insect bites	415	27.7	858	27.3	NS
Avoid sharing food with someone who has HIV/AIDS	210	14.0	638	20.3	< 0.0001
Avoid touching someone who has HIV/AIDS	148	9.9	431	13.7	0.0001
Have a good diet	53	3.5	258	8.2	< 0.0001

NS = not significant.

newspapers and magazines as well as the radio. Similar results were found in an Iranian study in 2002 [8].

Marriage and regular partnerships

Almost 70% of respondents were sexually active. Males, in general, got married at later ages than females. If we consider those who have had sex and were not married and those who had regular partners apart from spouse, especially since some had multiple partners, the rates are close to those in some studies in other countries, for example, 13% in St. Petersburg in Russia [9]. Since there was a high belief in the fidelity of the partner, the risk for sexual transmission of HIV could be exacerbated.

Cumulatively, all the risk factors will be predisposing to HIV transmission among married couples, especially among the young and middle-aged couples. The risk is augmented when the time of first sexual experience is taken into consideration. About one-third first experienced sexual intercourse before the age of 21 years and more than half did not respond. This can

be compared with reports on young people in the United States of America, which indicate that over two-thirds of the youth participated in heterosexual intercourse prior to age 17 years [10]. Such behaviour is associated with higher risk, and young men rapidly evolve towards engaging in risky behaviours, probably an indication of the education and awareness vacuum in which young people “come of age” in Lebanon and elsewhere [10,11]. Therefore, all parameters that add to the risk of acquiring HIV infection were present to a significant extent.

Condom use

Although 16.8% of the sexually active people were at risk of HIV infection in 2004, only 71.7% used condoms in relations with non-regular partners, behaviour which increases the risk of HIV transmission.

More work should be done with a view to promoting a basic change in the attitude of younger males towards condom use—students had the highest rate for casual sex but the lowest rate for condom use—

Table 12 Relationship between sex and attitude, behaviour and practices with regard to HIV/AIDS, 2004

Sex	Knows someone who has HIV/AIDS		No chance of contracting HIV		Changed sexual behaviour Overall		In past 12 months		Willing to take care of family member with AIDS		Keep positive status secret		HIV/AIDS patients should continue working		HIV/AIDS patients should receive more health care		Total N
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Male	114	6.2	1188	64.3	501	27.1	90	18.0	1020	55.2	519	28.1	1200	65.0	1394	75.5	1847
Female	99	7.6	934	72.1	257	19.8	63	24.5	852	65.8	395	30.5	973	75.1	936	72.3	1295
Total	213	6.8	2122	67.5	758	24.1	153	20.2	1872	59.6	914	29.1	2173	69.2	2330	74.1	3142

and making condoms more available in suburban and rural areas. In addition, the issue of "fidelity of the partner" should be addressed. No clear-cut conclusion could be reached with regard to females because of the small number that used condoms. It is of interest to point out that no one mentioned the cost of condoms as a barrier.

Despite the fact that 87.3% of the participants knew that condoms could protect from HIV/AIDS, less than 15% of those who were sexually active had used them, a great deterioration from about 50% in 1996. Although the utilization rate was low, it was still better than in some studies, for example, the utilization rate was only 6% in one American study, and many of the respondents did not believe condoms protected against AIDS transmission [12].

The prevention indicators related to condoms showed that they were available and accessible, but to a lesser extent than in the 1996 survey. There is no doubt about the availability of condoms in the market (pharmacies, supermarkets, gas stations) but the total number available would constitute only a small fraction of the projected needs for the sexually active population fraction.

Sexually transmitted diseases and health issues

Significant efforts should be deployed towards proper management of STDs since in many cases those reporting having symptoms were not seeking professional treatment. Attitude to the partner had also worsened for many indicators.

Similar efforts should be oriented towards the promotion of proper protective measures, especially the use of condoms since they were not used as the first choice in prevention methods in risky behaviours.

More effort should be deployed to encourage all those who suspected they may have STD to seek professional help since

over 20% still said they had sought the advice of a friend or a relative first rather than professional advice. Comparing the 2004 data with that of 1996 survey, we noted an increased reporting rate and a statistically significant decrease in recurrent episodes. This could be a sign of increased awareness and improved management since fewer said they would get advice from a friend or do nothing. However, more people would use self-medication rather than get professional advice. This could be an indication of low accessibility to health care or particularly inadequate health-care-seeking behaviour.

Knowledge of AIDS

The survey results indicated that awareness of AIDS had become almost universal in Lebanon by 2004. Nevertheless, over one-third of the participants endorsed some inappropriate practices for prevention and the rates for most of these misconceptions had deteriorated significantly since 1996. Clearly, inappropriate and invalid practices should be tackled in future campaigns. In addition, some work should be deployed to clarify another important misconception: the fact that persons who have HIV/AIDS do not always show symptoms.

The respondents had a low perception of personal risk: only a quarter had introduced behavioural changes in their lifestyle during the previous year. This perception of low vulnerability was greater in females and is probably reflected in their more positive attitudes towards the HIV/AIDS patients. The only negative point in this context was the view of the majority of respondents that HIV status should be revealed. This issue of confidentiality is still raising debate, and needs to be addressed in future campaigns.

Comparison of the prevention indicators in 1996 and 2004 shows a decrease in awareness, knowledge of protection methods and belief in personal protection. This indicates

that a certain level of misconception was still prevailing in the population, which could lead to negative attitudes towards HIV/AIDS patients. The data suggest that current education programmes regarding sex and AIDS are not impacting on the Lebanese people. Similar findings were encountered in a Russian study [9].

HIV/AIDS effect on beliefs, attitudes and lifestyle

The perception of personal risk could have been the basis for many risky behaviours and lifestyles adopted by a significant proportion of respondents (casual sex, not using condoms, multiple partners, etc.). Coupled with the high rate of belief in self-protection, this did not, as expected, lead to significant behaviour changes. This was a reflection of the respondents' own perception of low vulnerability to infection generally in those who were well educated, young, and well aware of the methods of protection against the disease.

Recommendations

Taking into consideration the diversity of the Lebanese society and the differences demonstrated in this study, interventions should be more targeted, addressing specific communities and groups for better outreach and impact.

Risk perception should be addressed more in future campaigns, along with misconceptions. The concept of "safe sex" needs to be emphasized and prevention (condoms) need to be better promoted and made more accessible.

More studies need to be done to assess the prevalence and type of STDs, with emphasis on determinants of sexual behaviour as well as health seeking behaviour in patients with STDs.

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