

# Heterosexual awareness and practices among Lebanese male conscripts

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الوعي والممارسات الجنسية مع الجنس الآخر لدى المجندين اللبنانيين الذكور  
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**الخلاصة:** لقياس السلوك الجنسي مع الجنس الآخر ومدى الوعي بالعدوى المنقولة جنسياً بين صغار البالغين من الذكور في لبنان، وللكشف عن العوامل المرتبطة بزيادة مستوى الاختطار الجنسي، أُجري مسح مقطعي على 730 مجنداً. أبلغ حوالي 50% منهم عن أي تجربة جنسية مع الجنس الآخر في أي وقت مضى من حياتهم. كان السائد هو الممارسة الجنسية للمقصورة على قرين واحد، وأبلغ نصف المستجيبين للدراسة فقط عن استعمالهم المستمر للعازل الذكري عند الإبلاج في المهبل. وقد ارتبط الاختطار الجنسي المرتفع بالسكن في المدن، وارتفاع مستوى التعليم، وقلة عدد أفراد الأسرة، وصغر العمر عند ممارسة التجربة الجنسية الأولى. من أجل ذلك يجب البدء بوضع استراتيجية وطنية تشمل على تحسين الوصد الروبائي والسلوكي، وعلى البرامج التربوية الوقائية وذلك قبل التعرض للاختطار الجنسي وقبل أن يصبح معدل وقوع الأمراض المنقولة جنسياً مشكلة صحية رئيسية.

**ABSTRACT** To assess sexual behaviour and awareness about sexually transmitted infections (STIs) among young male adults in Lebanon, and to explore determinants associated with increasing levels of sexual risk, a cross-sectional survey of 730 conscripts was conducted. About 50% reported any lifetime heterosexual experience. Non-mutually exclusive sex predominated, and only half of the respondents reported consistent condom use during insertive vaginal sex. Higher sexual risk-taking was associated with urban residence, higher education, lower family crowding and younger age at first sexual experience. A national strategy with epidemiological and behavioural surveillance and educational programmes must be initiated before sexual risk-taking and incidence of STIs become a major public health issue.

## Perception et pratiques hétérosexuelles chez des conscrits libanais

**RESUME** Une étude transversale a été réalisée auprès de 730 conscrits pour évaluer le comportement sexuel et la sensibilisation aux infections sexuellement transmissibles (IST) chez les jeunes adultes de sexe masculin au Liban et pour étudier les déterminants associés à des niveaux de risque sexuel accrus. Environ 50 % signalaient avoir eu une expérience hétérosexuelle. Les relations sexuelles non mutuellement exclusives prédominaient, et la moitié seulement des personnes interrogées déclaraient utiliser les préservatifs de manière régulière durant les rapports sexuels avec pénétration vaginale. Une plus grande prise de risque sexuel était associée à la résidence en milieu urbain, à un niveau d'instruction plus élevé, à une plus faible promiscuité familiale et à un âge plus jeune lors de la première expérience sexuelle. Une stratégie nationale comprenant une meilleure surveillance épidémiologique et comportementale ainsi que des programmes d'éducation doit être mise en place avant que la prise de risque sexuel et l'incidence des IST ne deviennent un problème de santé publique majeur.

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## Introduction

Unprotected sexual practices can lead to sexually transmitted infections (STIs), some with grave personal and societal consequences. Young adults exploring their sexual potential tend to underestimate or ignore risks linked to unprotected sex [1]. It is widely believed that up to one-fourth of AIDS patients worldwide were infected during adolescence [2]. The World Health Organization (WHO) estimates indicate that 333 million new cases of STIs occur annually worldwide among young people aged 25 or younger [3]. In some developing countries, more than half the population belong to that age group. In those countries where norms are still traditionally male-dominated, health education and prevention must preferentially target young men who are the "deciders" in sexual practices. The aim would be to increase their sense of sexual responsibility towards their vulnerable, mostly female partners and their children, and for their own well-being [4].

A first step towards engendering a sense of responsibility among young men in developing countries is to assess the patterns and frequency of their sexual practices, as well as their awareness of sexual risks. Data on these intimate and often stigmatized topics are difficult to obtain, even in less conservative societies. In 1986, Norway became the first country to run a population-based study of sexual practices, which was about 5 to 6 years after the first reports of AIDS cases in the United States (US) [5]. In some instances in the US and the United Kingdom, population-based studies of sexual behaviour were interrupted under pressure from self-styled "family values" lobbies [6]. In the early 90s, WHO prepared blueprints for surveys of sexual behaviour in less developed countries but few countries used the surveys in their en-

tirety, in comprehensive cross-sectional surveys, and/or allowed data to be published. Fifteen (15) developing countries located mostly in Africa and Latin America have data partially available from the past 5 years. None of those countries are in the Middle East-North Africa (MENA) region [7]. To our knowledge, no separate data regarding sexual behaviour have yet emerged from the MENA area.

The Lebanese population, estimated at 3.5 million, is relatively young: 60.5% is under the age of 30 years [8]. The majority (60%–70%) of the Lebanese population lives in the "greater Beirut" area in and around the capital city Beirut, the centre of the economic and cultural life of the country. There are marked sociological differences between rural and urban areas, and between more or less educated or affluent Lebanese. All secondary-schooled Lebanese (60% of the population by some estimates) are conversant in either French or English or both and have been exposed to non-traditional ideas and lifestyles. There are no restrictions on the amount of information the Lebanese population can obtain and contacts they can make from either travelling abroad or interacting with foreign visitors at home.

The routine surveillance system for infectious diseases in Lebanon has been reactivated since the return of civil peace in 1991, but most experts openly admit that it has not yet reached an acceptable level of comprehensive coverage. The most reliable data on STIs currently available in Lebanon are those concerning HIV/AIDS. This infection is treated by a small network of physicians who understand the importance of accurate notification and are fully cooperating with the relevant department at the Ministry of Public Health (MOPH). By the end of 1999, the cumulative number of HIV/AIDS cases recorded in Lebanon

since 1984 was 581 cases. Experts estimate that the "iceberg" may include 2500 more cases as yet undiagnosed or undeclared. In 1998, MOPH reports indicated 811 cases of hepatitis of which 56% were confirmed cases of hepatitis B, 57 cases of syphilis, and only 2 cases of gonorrhoea [9]. Those 2 cases were foreigners seeking employment in Lebanon who were detected during required screening procedures at the MOPH Central Laboratory. It is widely admitted that Lebanese physicians are very reluctant to report STI cases in their patients for fear (largely unfounded) of a lack of confidentiality. The lack of information on STIs, and the reluctance of experts to discuss these infections, means that the awareness of risk related to sexual practices is minimal within the Lebanese population. The exchange of information with practising physicians seems to indicate that the most frequently seen STIs are currently ectoparasites, venereal warts and gonorrhoea.

Young single people in Lebanon normally live at home with their parents. Those who would like to move out into their own accommodation cannot afford to do so. Young people mingle freely in everyday social life and have many opportunities to get intimately involved. However, the lack of privacy at home and the social importance still largely attached to pre-nuptial female "virginity" limit the degree to which young lovers are able or willing to go in terms of sexual practices. In most Lebanese urban areas today, men can go to conveniently located "bars" where they meet sex workers and where discrete cheap accommodation is provided for sex. This new form of brothel is not licensed, but the authorities tolerate them and rarely interfere with their activities. Such "bars" are virtually non-existent in semi-rural or rural areas. "Bar" sex-workers are women from Lebanon and

neighbouring Arab countries, and increasingly from Eastern Europe and the former Soviet Union. Women coming into Lebanon as tourists but with the aim of becoming sex-workers do not undergo the health screening normally required from foreigners coming with the declared intention of seeking employment. This situation raises concerns as STIs, and especially HIV, are spreading into former "iron curtain" countries [10], and the probability of their import with sex workers coming into Lebanon increases. The proportion of Lebanese men who use the services of sex workers is not known.

All Lebanese males reaching the age of 18 years have to serve for one year as conscripts in the Lebanese army. Some men may postpone their military service until they have completed their higher education. Legal loopholes exist which are believed to favour evasion of service by the most affluent citizens but, in the current economic climate, the highest socioeconomic stratum is a small minority. Conscripts are therefore an excellent captive population largely representative of young Lebanese men.

In our study, we aimed to investigate the sexual practices and awareness of a sample of young Lebanese men drafted for their one-year compulsory military service.

## Methods

### Target population and sampling procedure

This study was designed as a cross-sectional, systematic random sample survey of young Lebanese men born between 1 January 1973 and 31 December, 1980, who were mentally and physically able and called to serve in 1999. At the time of this survey, 7300 conscripts were enrolled for

military service. At intake, conscripts are distributed into three military camps:

- The largest camp is located in North Lebanon and houses 4000 men, all without higher education degrees. Of those, 400 men (10%) were selected.
- A second camp is located in central Mount Lebanon not far from Beirut and houses 3000 men of all educational levels up to 4 years of higher education. Of those, 300 men (10%) were selected.
- The smallest camp is located within the military academy, on the outskirts of Beirut, and houses about 300 conscripts who hold degrees requiring 5 years of higher education or more. Such conscripts are promoted to junior officer rank after finishing their initial 12-week basic infantry training. Of those, 30 (10%) were selected.

Conscripts were selected directly from the name rosters of each camp. Every tenth name was selected sequentially for participation, to obtain 730 names. All selected conscripts were approached, and only 10 refused to participate or were physically not available at the time of the interview. They were replaced by other randomly selected names from the corresponding camps. Power calculations were not possible in the absence of available assumptions regarding the prevalence of various sexual behaviours.

### **Survey instrument and activities**

The National Council for Scientific Research reviewed and cleared the ethical aspects of this research. Permission to conduct the survey was eventually obtained from the army command on the recommendation of the army medical unit. A structured questionnaire was constructed to be completed in about 30 minutes in face-to-face interviews. The questionnaire

was pilot-tested with about 40 conscripts from the previous year. The same interviewer, a military medical technician, carried out the interviews over a 2-month period. Selected participants were invited to meet with the interviewer in an isolated tent or room. They were informed of the aim of the interview, asked for participation and reassured that their decision not to participate would have no negative consequences and that data provided would remain anonymous. Fewer than 10 men refused to participate and were replaced by other conscripts selected in the same fashion.

### **Study variables**

#### *Demographic and socioeconomic variables*

These included age, education and parental education (3 levels), employment prior to conscription (yes/no), crowding in the household (persons/room) subsequently categorized in three levels, place of residence (rural/urban). All those variables except employment were summed in a socioeconomic status (SES) index ranging from 5 (low personal and parental education, high crowding and rural residence) to 14 (high personal and parental education, low crowding, urban residence).

#### *STI knowledge*

Thirteen (13) questions regarding causes, signs and means to prevent STIs were obtained and summed in an index ranging from 0 (no knowledge at all) to 18 (excellent knowledge).

#### *Sexual practices*

"Having sex" was defined as "ejaculating in contact with a partner". Participants were asked whether they had ever had sex and had sex in 1998 (the year preceding this survey). For those who had ever had any

sexual activity, age at first encounter, types of sexual practice, frequency of condom use and causes of inconsistent condom use were assessed. For those who had had sex in the past year, the same detailed information was obtained, in addition to number and types of sexual partners. Throughout the interview with the conscripts, "sexual partners" were considered female and heterosexual practices were assumed. The pilot test had revealed that the assessment of same-sex behaviour was too sensitive an issue. When asked about same-sex behaviour, participants in the pilot-test denied such behaviour with indignation. It was therefore decided that same-sex data would not be collected to preserve the validity of the questionnaire. It is hoped that this limitation will be addressed in the future as the Lebanese public becomes more accustomed to disclosing information on sexual behaviour.

A 4-level index of sexual risk was created and used as the outcome variable. The four levels were defined as follows:

- Level 0: participants who had never had sex
- Level 1: included participants who:
  - had had sex but not during 1998, who were thus assumed to have tried having sex but who had not adopted a regular practice of sex; or
  - had consistently protected sex (consistent condom use or practices without any penetrative sex) with only one partner; or
  - had inconsistently protected sex with the same partner in a relationship presumed mutually exclusive.
- Level 2: included those who:
  - had consistently protected sex with more than one partner; or
  - had inconsistently protected sex with one partner "they did not know well"
- Level 3: included those who had inconsistently protected sex with more than one partner

### Statistical methods

All variables were tabulated and presented as frequencies for categorical variables, and as means, medians and standard deviations for continuous variables. Comparisons between the 4 risk groups were tested using ANOVA for continuous variables and chi-squared for categorical ones. Statistically significant differences were those testing with a  $P$ -value  $< 0.05$ . Relevant correlations were measured when required. Independent variables with significant differences were included in a multivariate regression analysis, and a reduced model was defined to partially predict the level of sexual risk in the sample. All computations were done using *Epi-Info* and *SPSS*.

### Results

The ages of the 730 participants ranged between 19 and 26 years with a mean of 21.2 and a median of 21 years. Almost all participants were single, with 3.2% engaged and 1.3% married presumed without children. The usual residence was urban for 51% of the group, of whom two-thirds lived in the greater Beirut area. Most (89%) lived with their parents with an additional 7% who lived with their parents more than half the year. Crowding ranged between 0.16 and 10 persons/room, with a mean of 1.8 and a median of 1.5 persons/room. Of all the participants, 44.5% were poorly educated, with about 17% illiterate or with inconsistent primary education. About 85% had held some type of employment before joining the service, mostly as unskilled manual labourers or in the family agricultural business. The summed SES index in this sam-

ple ranged from 5 to 14, with a mean of 6.9 and a median of 6. On a possible range of 0 to 18, the mean level of knowledge regarding STIs was 9.9 (standard deviation = 3.7), with a median of 10. Details of personal variables are presented in Table 1.

At the time of the interview, 50% of the participants had never had any sexual activity, while 40% reported at least one experience with insertive vaginal sex (IVS). Of those with any IVS experience, 51% reported consistent condom use, 31% inconsistent condom use, and 18% never used condoms. Table 2 shows the various sexual practices, as well as reasons for not using condoms.

Among the 367 young men with any sexual experience, the number of partners reported in the previous year ranged between 0 and 50, with a mean of 3.4 partners (standard deviation = 5.6) and a median of 2; 72% had never had sex with a prostitute. Perceptions of faithfulness in partners varied widely: 101 participants (27.5%) believed their partner(s) to have sex exclusively with them, 156 (42.5%) believed their partner(s) had sex with other men, and 110 (30%) did not know or were not sure. The various types of sexual partners are detailed in Table 3. The age of first sexual activity ranged from 13 to 24 years, with a mean of 17.1 years (standard deviation = 2) and a median of 17.

The distribution of this sample in the four categories of sexual risk is presented in Table 1. Increasing risk levels were significantly associated with increasing age, with a median age varying from 20 years in risk group 0 to 22 years in risk group 3. A significant positive association was also found between the composite SES index and sexual risk levels. In particular, higher risks were associated with higher education, lower crowding and urban residence. Employment prior to military service was

not associated with risk level. Mean knowledge increased significantly with higher risk level. All details are presented in Table 1. Higher risk levels were significantly associated with younger age at first experience. While the mean age at first encounter in risk group 1 was 17.8 years (standard deviation = 2.2), it was 17 years (standard deviation = 1.9) in risk group 2, and 16.5 years (standard deviation = 1.9) in risk group 3.

Age, area of residence, crowding, and personal education were entered in a multivariate regression to predict level of sexual risk. Results indicated that the most significant predictors of risk were lower crowding and higher education. A reduced predictive model could be defined as: (risk) = 0.7126 - 0.1808 (crowding) + 0.3073 (education) (data not shown in tables).

## Discussion

It is not easy to compare findings on sexual practices from Lebanon with the same from areas with similar socioeconomic and cultural characteristics. An extensive review of literature indexed on Medline revealed that an article was published from Lebanon on the issue of sexual behaviour among university students in 1967 [11]. Since then, no other papers from any Arab-speaking country could be found in that database. This survey of a sample of young Lebanese men shows that behaviour is still largely conservative. Only half the group, with a median age of 21 years, reported any lifetime heterosexual experience. Among those who reported some experience, a large proportion indicated that their practices did not include IVS. The median number of partners among men with some sexual experience, almost all still single, did not exceed 2.

Table 1 Personal variables by level of sexual risk among the Lebanese conscripts

Variable	Sexual risk level <sup>a</sup>						P-value			
	0		1		2			3		All
	No.	%	No.	%	No.	%	No.	%	No.	%
Number of conscripts	363	49.7	120	16.4	144	19.7	103	14.2	730	100
Personal education										
Low (less than secondary)	210	57.9	43	35.8	49	34.0	23	22.3	325	44.5
Medium (secondary)	73	20.1	19	15.8	30	20.8	17	16.5	139	19.0
High (post-secondary)	80	22.0	58	48.3	65	45.1	63	61.2	266	36.4
Crowding										
Low ( $\leq 1$ person/room)	129	35.5	21	17.5	21	14.6	15	14.6	211	28.9
Medium (1.01–2.24 persons/room)	166	45.7	56	46.7	68	47.2	43	41.7	333	45.6
High (> 2.24 persons/room)	68	18.7	43	35.8	55	38.2	45	43.7	186	25.5
Residence										
Urban	154	42.4	66	55.0	87	60.4	69	65.0	374	51.2
Rural	209	57.6	54	45.0	57	39.6	36	35.0	356	48.8
Previous employment										
Yes	317	87.3	104	86.7	119	82.6	80	77.7	620	84.9
No	46	12.7	16	13.3	25	17.4	23	22.3	110	15.1
Mean age in years	Mean	s	Mean	s	Mean	s	Mean	s	Mean	s
Mean socioeconomic index	20.6	2.0	21.7	2.4	21.4	2.1	22.1	2.4	21.2	2.1
Mean knowledge index	5.9	1.7	7.5	2.5	7.8	2.4	8.4	2.5	6.9	4.4
Mean crowding	8.1	3.5	11.2	2.6	11.8	2.7	12.5	3.7	9.9	3.7
	2.1	1.6	1.5	0.7	1.5	0.6	1.4	0.7	1.8	0.4

<sup>a</sup>A composite index including levels of unsafe sexual practices and types of sexual partners. Level 0 indicates the absence of any lifetime sexual experience.  
s = standard deviation.

**Table 2 Sexual practices among male Lebanese conscripts (n = 730)**

Practice	No.	%
<i>Lifetime experience of sexual activity</i>		
None	363	49.7
Some experience of insertive vaginal sex	292	40.0
Experience without any insertive vaginal sex	75	10.3
<i>Sexual practices other than insertive vaginal sex (n = 239)<sup>a</sup></i>		
Mutual masturbation	179	74.9
Body rubbing (vaginal "frottage")	149	62.3
Fellatio or cunnilingus	110	46.0
Insertive rectal sex	42	17.6
<i>Condom use with insertive vaginal sex (n = 292)<sup>a</sup></i>		
Consistent	149	51.0
Inconsistent/never	143	49.0
<i>Reasons for inconsistent condom use (n = 143)<sup>b</sup></i>		
Confidence in the partner/exclusive partner	123	86.0
Condom was not available	58	40.6
Unplanned sexual encounter	45	31.6
Condom reduces pleasure	24	16.8
Partner refused condoms	10	7.0

<sup>a</sup>Data obtained for sexual activity in the previous 12 months.

<sup>b</sup>The categories are not mutually exclusive and more than one answer could be given.

The prevalence of lifetime sexual experience is lower than that reported in a recent survey from Peru, a country with different cultural features and lower economic development than Lebanon. In that survey, it was found that 75% of young adults aged 19–30 years had already had some sexual experience [12]. The life prevalence of heterosexual experience in the Lebanese sample is also lower than that reported in

samples of similar ages in more industrialized countries [6,13,14]. On the other hand, the median age of the first experience (17 years) did not vary from those other studies.

Compared to young people in more industrialized nations, these young Lebanese men demonstrated a very low level of knowledge and perception of risk related to sexual activity among those with some experience. Non-mutually exclusive sex predominated, with only 1 out of 2 respondents reporting consistent condom use in IVS. Furthermore, increasing levels of knowledge were associated with higher sexual risk. The divergence of knowledge and behaviour indicates the importance of intervening psychosocial factors, some al-

**Table 3 Types of sexual partners among male Lebanese conscripts who had experienced sexual activity (n = 367)<sup>a</sup>**

Variable	No.	%
<i>Number of partners in the previous year</i>		
0	36	9.8
1	113	30.8
2–4	154	42.0
≥ 5	64	17.4
<i>Regular partner</i>		
None	152	41.4
At least one	215	58.6
<i>Occasional partner (partner "they did not know well")</i>		
None	69	18.8
At least one	298	81.2
<i>Partners who are prostitutes</i>		
None	266	72.5
Some	82	22.3
All	19	5.2

<sup>a</sup>Those with any sexual experience among 730 participants interviewed in 1999. All data here are reported for the previous year.



ready well documented in theoretical models: risk-taking attitudes, poor control over sexual impulse, perceived invulnerability, perceived social norms [15,16]. The shroud of silence and denial surrounding STIs in Lebanese society has meant that young people may never have heard of or discussed them, nor ever seen or known someone suffering from a STI. The absence of visual representation of STIs adds to the dissociation between knowledge and practice [17]. Future preventive efforts should target those psychosocial factors affecting behaviour in addition to increasing public awareness regarding the potential adverse consequences of risky sexual behaviour.

The validity of self-reported data is difficult to estimate in this situation. It may be argued that young men from traditional backgrounds may be reluctant to confide personal information to an unknown researcher. Conversely, it may be argued that young men in a military camp may be tempted to adopt a "macho" attitude and inflate their sexual prowess in front of an older military-related male interviewer. It is hoped that these two opposing tendencies will have contributed to maintaining results within an acceptable range of accuracy. The use of a non-military interviewer to decrease the sense of threat among conscripts was discussed during the planning of the study. However, the military authorities made it clear they would deny access to conscripts to any non-military personnel.

A fair amount of same-sex activity may take place among young men in this culture where gender-segregated social activities are not considered abnormal. However, same-sex activity was considered too sensitive an issue to be included in this survey. In at least one survey of young adults in Peru, bisexual activity was reported by

12% of males aged 19–30 years [12]. It is impossible given the available information to speculate on the magnitude of same-sex practice in Lebanon today.

Higher sexual risk was associated with younger age at first sexual experience, a finding reported elsewhere [18]. The fact that sexually precocious young men rapidly evolve towards taking higher sexual risks clearly indicates the education and awareness vacuum in which young people "come of age" in Lebanon. It may be that those engaging relatively early in sex possess personality traits rendering them more prone to experimenting in risk-taking behaviour and/or to responding more forcefully to sexual urges. A more precise position cannot be taken from this survey as the psychological characteristics of participants were not part of the assessment. Alternatively, having started earlier than others, these "experimenters" would have had more opportunities to develop social networks and skills which would sustain their sexual behaviour. Logically this would lead to having more sexual partners, one of the parameters included in the risk scale.

In this survey conscripts from rural areas, those with lower education and from larger less affluent families were less likely to have engaged in any sexual activity. Among those who had had some sexual experience, higher risk was associated with higher SES. It is relatively easy to understand the association between life in rural areas and lower sexual risk. In small rural communities, traditional values and the ever-watchful eye of families and neighbours make it difficult for young people to engage in intimate physical contact. Rural men engaging in casual sex with "outsiders" may be acceptable in those communities, but the availability, accessibility and cost of such sex may be obstacles.

It is less easy to understand the apparent association between higher SES and sexual risk in this sample. This finding is in contrast with what has been reported in more liberal, less traditionally structured societies [14,19]. It may be argued that men with a higher SES, be it educational or economic, in developing countries may feel more empowered to engage in behaviours with higher risk potential [20,21]. This may partially explain why social advantage seems to lead to higher sexual risk in Lebanon.

Overall, this survey shows that sexual education and awareness in Lebanon is inadequate. Opportunities for improving this situation abound in the school system and in the mass media, despite traditional resistance from parents, educators and community leaders. The fact that STIs are still largely perceived to be a minor public health problem has not helped in shaking the national apathy regarding sexual awareness. The mass media in particular have shown their capacity to promote sexual awareness during the yearly campaigns for AIDS prevention. At those times, clear and direct messages promoting safer sex are broadcast on many national television

channels. Health practitioners and social workers must be co-opted to engage young men in conversations regarding safer sex and/or to provide condoms whenever opportunities arise. A national strategy including epidemiological and behavioural surveillance, as well as preventive action must be initiated before sexual risk-taking and STI incidence take a turn for the worse.

The findings of our survey are the first ever to be obtained in Lebanon, and may also be the first to be published from any Arabic-speaking country. They will be useful in setting a baseline measure for comparisons with other industrialized countries of similar socioeconomic background, and in evaluating change within Lebanon over time.

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## References

1. *World AIDS campaign with young people*. Geneva, World Health Organization/UNAIDS, 1998.
2. *School health education to prevent AIDS and sexually transmitted diseases*. Geneva, World Health Organization, 1992 (WHO AIDS Series, 10).
3. *Control of sexually transmitted diseases*. Alexandria, World Health Organization Regional Office for the Eastern Mediterranean, 1997.
4. *Survey on partners relations and risk of HIV infection*. Geneva, World Health Organization, Global Programme on AIDS, Social and Behavioural Research Unit, 1989.
5. Sundet JM et al. Number of sexual partners and use of condoms in the heterosexual population of Norway. Relevance to HIV infection. *Health policy*, 1989, 13:160-7.
6. Laumann E et al. The Social Organization of Sexuality. In: *Sexual practices in the United States*. Chicago, University of Chicago Press, 1994:177-80.

7. Cleland J, Ferry B, eds. *Sexual behaviour and AIDS in the developing world*. London, Taylor & Francis, 1995.
8. *Estimates of age-composition of the population*. Beirut, Office of the Prime Minister of Lebanon, Department of Vital Statistics, 1997.
9. Lebanese Ministry of Public Health, Epidemiological Surveillance Unit. *Epi-news*, 1999, 6.
10. The global HIV/AIDS epidemic, 2001. *Morbidity and mortality weekly report*, 2001, 50:434-9.
11. Melikian LH. Social change and sexual behaviour of Arab university students. *Journal of social psychology*, 1967, 73: 169-75.
12. Caceres CF et al. Young people and the structure of sexual risks in Lima. *AIDS*, 1997, 11:S67-77.
13. Calvey M et al. *L'entrée dans la sexualité, les comportements des jeunes dans le contexte du SIDA*. [Sexual initiation and behaviour among young people in the context of AIDS.] Paris, Masson, 1997:260-4.
14. Johnson AM et al. *Sexual attitudes and lifestyles*. Oxford, Blackwell Scientific, 1994:70-78, 102.
15. Montgomery SB et al. The Health Belief Model in understanding compliance with preventive recommendations for AIDS: how useful? *AIDS education and prevention*, 1989, 1:303-23.
16. Brown LK, Diclemente RJ, Park T. Predictors of condom use in sexually active adolescents. *Journal of adolescent health*, 1992, 13:651-7.
17. Stewart SA, Beazley RP. Meeting a person with AIDS in the classroom: an evaluation. *Canadian journal of public health*, 1993, 84:265-7.
18. Greenberg J, Magder L, Aral S. Age at first coitus. A marker for risky sexual behavior in women. *Sexually transmitted disease*, 1992, 19:331-4.
19. Choi KH, Catania JA, Dolcini MM. Extramarital sex and HIV risk behavior among US adults: results from the National AIDS Behavioral Survey. *American journal of public health*, 1994, 84:2003-7.
20. Bourdieu P. The forms of capital. In: Richardson J, ed. *Handbook of theory and research for the sociology of education*. New York, Greenwood Press, 1986.
21. Macintyre S et al. Do housing tenure and car access predict health because they are simply markers of income or self esteem? A Scottish study. *Journal of epidemiology and community health*, 1998, 52:657-64.