

Knowledge, attitudes and practices of secondary-school pupils in Oman: II. Reproductive health

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تقصي معارف ومواقف وممارسات طلاب المدارس الثانوية في عُمان: 2. الصحة الإنجابية

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الخلاصة: قام الباحثون في إطار هذه الدراسة بتقصي المعارف والمواقف والممارسات المتعلقة بالصحة الإنجابية لدى عينة وطنية ممثلة من المراهقين العمانيين، قوامها 1670 فتى و1675 فتاة. وتم سؤال هؤلاء المراهقين من خلال استبيان ذاتي الاستكمال عن البلوغ، والزواج، والمباعدة بين الولادات، ومرض الإيدز وسائر أنواع العدوى المنقولة جنسياً. وبيّنت الدراسة أن نصف أفراد العينة فقط كانوا على علم بالتغيرات التي تطرأ على أفراد جنسهم عند البلوغ، وأن أقل من النصف كانوا على علم بالتغيرات التي تحدث لدى أفراد الجنس الآخر عند البلوغ. وكان الإناث أكثر ميلاً من الذكور، بدرجة يُعتدُّ بها إحصائياً، إلى تأخير سن الزواج. وكان متوسط عدد الأبناء المرغوب فيه من قِبَل أفراد العينة هو 4.9. وأبدى حوالي ثلثي المراهقين موقفاً إيجابياً من وسائل منع الحمل الحديثة، وأعربوا عن اعتزامهم استخدام هذه الوسائل في المستقبل. أما معرفة العينة بفترة الخصوبة وبمرض الإيدز وسائر أنواع العدوى المنقولة جنسياً فكانت متواضعة. وأيدت نسبة عالية من كلا الجنسين في العينة (80%) خِفاض الإناث.

ABSTRACT We examined the knowledge, attitudes and practices of Omani adolescents with regard to reproductive health in a nationally representative secondary school-based sample of 1670 boys and 1675 girls. Through a self-administrated questionnaire the adolescents were asked about puberty, marriage, birth spacing and AIDS and sexually transmitted infections. Only half of the sample knew the changes at puberty of their own sex, while even fewer knew the changes in the opposite sex. Girls were inclined significantly towards later age of marriage than boys. The mean number of children desired by the sample was 4.9. About two-thirds of the adolescents had a positive attitude toward modern contraceptive methods and intended to use them in the future. Knowledge of fertility period was poor as was knowledge of AIDS and sexually transmitted infections. There was a high rate of approval (80%) of female genital cutting by both sexes.

Connaissances, attitudes et pratiques des élèves du secondaire à Oman : II. Santé génésique

RÉSUMÉ Nous avons examiné les connaissances, attitudes et pratiques d'adolescents omanais en matière de santé génésique dans un échantillon national représentatif de 1670 garçons et 1675 filles en milieu scolaire secondaire. Les adolescents ont été interrogés sur la puberté, le mariage, l'espacement des naissances, le SIDA et les infections sexuellement transmissibles au moyen d'un auto-questionnaire. Seule la moitié des sujets de l'échantillon connaissait les changements survenant à la puberté pour leur propre sexe, tandis que moins de sujets encore connaissaient ces changements pour le sexe opposé. Les filles avaient significativement tendance à envisager un âge plus tardif pour le mariage par rapport aux garçons. Le nombre moyen d'enfants souhaité dans l'échantillon était de 4,9. Environ deux tiers des adolescents avaient une attitude positive à l'égard des méthodes de contraception modernes et avaient l'intention de les utiliser à l'avenir. Les connaissances concernant la période féconde étaient faibles, de même que pour le SIDA et les infections sexuellement transmissibles. Il y avait un taux élevé (80 %) d'approbation de la circoncision féminine par les deux sexes.

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Introduction

The International Conference on Population and Development (ICPD), which met in Cairo in 1994, and the Fourth International Conference on Women, in Beijing in 1995 endorsed the rights of young people to reproductive health information and services [1].

Young people face a variety of reproductive health risks: sexually transmitted infections (STIs) including HIV infection; too-early pregnancy and childbearing with an increased risk of injury, illness and death for mother and infant; and unintended pregnancy, often leading to unsafe abortion and its complications. Young people may know little about reproductive health and may have incorrect or misleading information about fertility and contraception. Many have negative attitudes about contraceptives. Thus, meeting the reproductive health needs of youth requires, not only providing services, but also changing attitudes, overcoming community opposition, building understanding and educating adults about young people's reproductive health needs.

In many countries, the topic of adolescent sexuality and reproductive health is politically and culturally sensitive. As a result, reproductive health information and services do not reach most young people. However, some 55 countries have taken policy and programme measures to address the health needs of adolescents. Given the importance ascribed to adolescent health by such countries, the United Nations Population Fund is intensifying efforts to find acceptable and effective ways to help young people protect their reproductive health and their futures [2,3].

Oman has 30% of its population in the adolescent age group of 10–19 years [4].

Additionally, Oman's rapid development and modernization in the past 30 years has allowed for a vast exposure to mass media that has made the adolescent population of Oman more vulnerable to external influences. Oman, like many developing countries, has recognized adolescence as a critical stage of human life and has understood the need to empower this group with the right knowledge and information and to create a supportive environment so that efforts to achieve this in the long term will be more cost-effective and fruitful.

Hence a study of the health profile of adolescents in Oman was undertaken to gain a better understanding of the youth of today in the country. The overall goal of the survey was to establish a database on secondary school adolescents' knowledge, attitude and practices in certain areas in order to enhance policies and programmes directed to this age group [5]. The first part of the study focused on health compromising behaviours of adolescents [6]. The specific goal in the current study was to assess the knowledge and attitudes of Omani adolescents towards reproductive health issues and to assess the factors accounting for them.

Methods

This study is part of a nationally representative school-based knowledge, attitudes and practices survey. The study design, sample size and selection, the survey tools and questionnaires, data processing and analysis are described in detail in the first part of the survey [6]. In the current paper, we focus on the questions examining adolescents' knowledge and attitudes about reproductive health issues.

Puberty

The knowledge of the students was examined by asking them whether they knew all or some of the obvious physiological changes that accompany puberty, for both their own sex and the opposite sex. They were also asked about the source of their information, whether they received it before reaching puberty, and their reaction toward these changes when they took place.

Marriage

Adolescents were asked to give their opinion about the best age for marriage for adults of both sexes. Their attitude towards teenage marriage was examined in addition to whether they knew the consequences of such early marriage. Their attitude to consanguineous marriage and its drawbacks, as well as to polygamy was also assessed.

Birth spacing

The number of children desired by the students in the future was examined as well as their level of knowledge on birth spacing methods, the ideal birth spacing period, and the fertility period of men and women. They were also asked whether families with high income should use birth spacing or not.

AIDS/STIs knowledge and female genital cutting

The knowledge of the student sample about AIDS and STIs and the mode of transmission was examined. They were also asked about their attitudes towards female genital cutting.

Statistical analysis

Data entry was done using ISSA; data analysis was done using SPSS, version 6.0. In bivariate analysis, data were presented as percentages and means. The likelihood chi-squared test examined the distribution of data, while group means were compared

using ANOVA. A P -value ≤ 0.05 was considered statistically significant.

Results

Boys comprised about 48% of the sample and the mean age of the sample was 17.13 (SD 1.35) years. Despite the fact that 90% of the sample was 16 years or above, only half of the adolescents could explain all the obvious physiological changes that accompany puberty. The level of awareness was lower when asked about the changes in the opposite sex. About 53% and 47% of the boys and girls respectively were aware of all or some of the physiological and emotional puberty changes in their sex, whilst only 28% and 33% of them were able to identify all or some the changes in the opposite sex. The data suggest that females depend on the family to obtain their information, particularly the mother who ranks first (36.7%), whereas for males the information comes from sources outside the family, particularly from friends who come first (48.9%) as a source of information. There is an obvious discrepancy between sexes in the reaction of adolescents towards puberty changes. About 60% males indicated that the changes were normal, as compared to 19% of females (data not shown in tables). About 23% did not know about the changes before reaching the age of puberty. Table 1 shows the proportion of adolescents who were aware of puberty changes before they occurred according to sociodemographic characteristic and sex. Younger adolescents and girls, particularly of educated parents, were more likely to know about puberty changes before reaching the age of puberty (Table 1).

Adolescent girls were inclined towards a later age of marriage for both sexes than boys and the difference was statistically

Table 1 Distribution of adolescents who were aware of puberty changes before reaching the age of puberty by sociodemographic characteristics and sex

Characteristic	Boys (%)	Girls (%)	Total (n = 3114) (%)
<i>Age (years)</i>			
<16	71.86	83.74	79.27
16–	78.09	81.15	79.81
17–	75.78	75.27	75.51
18–	72.94	77.09	75.03
19 and above	73.10	75.16	73.90
Likelihood χ^2	3.48	10.513*	9.59*
<i>Secondary school grade</i>			
First	72.83	80.63	76.83
Second	76.61	77.49	77.04
Third	74.84	76.73	75.90
Likelihood χ^2	2.88	3.46	0.52
<i>Region^a</i>			
Muscat	71.53	77.41	74.59
Dhofar	77.38	80.65	79.29
Ad Dakhliya	82.42	72.98	77.84
North Ash Sharqiyah	78.82	85.49	82.56
South Ash Sharqiyah	78.94	76.07	77.54
North Al Batinah	73.04	82.61	78.14
South Al Batinah	73.04	75.53	74.42
Adh Dhahira	67.05	77.90	71.61
Musandam	68.70	72.19	70.20
Likelihood χ^2	20.25*	13.51	15.02
<i>Mother's education</i>			
Illiterate	73.78	77.36	75.55
Read & write	77.29	79.52	78.58
Primary/preparatory	74.29	83.07	79.11
Secondary and above	81.70	78.91	80.28
Don't know	70.95	64.79	68.31
Likelihood χ^2	4.76	11.48*	10.47*
<i>Father's education</i>			
Illiterate	74.62	73.83	74.24
Read & write	74.67	80.73	78.01
Primary/preparatory	72.78	78.62	75.72
Secondary and above	79.23	83.51	81.42
Don't know	71.56	70.74	71.14
Likelihood χ^2	3.77	13.63*	14.08*
Total	74.70	78.46	76.64

*P < 0.05.

^aAl Wusta was not included due to the low population density and difficulty in accessing it.

significant. The ideal age to get married for male and female adults was considered by the boys in our sample to be on average 22.9 years and 19.99 years respectively; by the girls it was considered to be 23.66 years and 21.43 years ($P < 0.01$ by F -test; data not shown in tables). While 78% of adolescents were fully aware of the consequences of marriage below 20 years on girls, boys were more in favour of teenage marriage and the difference was statistically significant. The level of awareness of the consequences of teenage marriage did not significantly differ by boys' age, grade, residence or parent education, whereas the level increased among older girls, those in higher high-school grade and in certain regions in Oman (Table 2).

The majority of the students (80%) had a understanding of the health problems encountered by a fetus as a result of consanguineous marriage. Nonetheless around a quarter of the boys expressed an interest in choosing a wife from among his relatives. Data also showed that 10.9% of the adolescents did not agree with limiting marriage to one woman. This percentage was significantly higher among boys (15%) than girls (6.8%). A negative attitude toward polygamy was significantly associated with residence in some regions for the whole sample and positively correlated with father's education among the girls (data not presented in tables).

The average number of children desired by adolescents was 4.9 with a statistically significant lower mean desired by girls (4.3 children) compared to boys (5.5 children) ($P < 0.05$ by F -test; data not shown in tables). Moreover, the percentage of boys who expressed an interest in having 6 or more children was double that of girls (43%

and 21% respectively). Knowledge of birth spacing methods was high among the adolescents; 93.5% had an awareness of at least one method. Girls had more information on this issue than boys, especially on contraceptive methods used by women such as pills, injections and intrauterine devices. As regards family planning, 17% of the sample agreed that there was no need for family planning among high income families with non-significant difference between boys and girls (data not shown in the tables). About 71% of the girls agreed that they would use modern contraceptive methods in the future, as compared to 66.6% of boys.

The majority of boys and girls (73.2% and 77.9% respectively) considered a birth spacing period of 2 years or more to be correct. Table 3 shows that the level of awareness of the healthy period for birth spacing was significantly and positively associated with their age and the level of their parents' education. However, the adolescents were generally unaware of fertility periods and only 15% knew the correct answer, i.e. mid-cycle for women.

As regards AIDS and STIs, 99% of the boys and 98.3% of the girls knew what AIDS is, whereas their knowledge of other STIs was poor. The majority (80%) were able to point out the various modes of disease transmission. However, one-third mentioned incorrect methods of infection, such as hand-shaking and kissing.

Nearly 80% of the sample considered female genital cutting to be necessary and important. This attitude was significantly higher in the interior regions than the capital or coastal regions and was inversely associated with higher level of parent education, especially the mothers' education (Table 4)

Table 2 Distribution of adolescents agreeing that teenage marriage has its problems by sociodemographic characteristic and sex

Characteristic	Boys (%)	Girls (%)	Total (n = 3114) (%)
<i>Age (years)</i>			
<16	72.50	80.73	77.61
16-	78.34	81.07	79.86
17-	69.41	80.79	75.38
18-	70.50	87.40	79.02
19 and above	73.84	81.03	76.61
Likelihood χ^2	9.16	11.09*	5.27
<i>Secondary school grade</i>			
First	73.87	80.78	77.37
Second	72.38	81.68	76.90
Third	69.59	85.18	78.33
Likelihood χ^2	1.52	7.62*	2.04
<i>Region^a</i>			
Muscat	78.95	80.18	79.58
Dhofar	77.62	83.44	81.02
Ad Dakhliya	70.24	82.29	76.13
North Ash Sharqiyah	74.41	75.07	74.78
South Ash Sharqiyah	74.82	79.19	76.97
North Al Batinah	70.98	88.08	79.98
South Al Batinah	66.76	85.39	77.02
Adh Dhahira	66.82	78.04	71.48
Musandam	64.46	73.04	68.32
Likelihood χ^2	13.68	17.32*	14.54
<i>Mother's education</i>			
Illiterate	71.71	82.35	76.95
Read & write	70.36	80.30	76.13
Primary/preparatory	73.75	83.95	79.36
Secondary and above	78.43	86.20	82.31
Don't know	70.13	78.60	73.79
Likelihood χ^2	2.19	4.23	6.35
<i>Father's education</i>			
Illiterate	71.00	81.10	75.82
Read & write	71.06	80.98	76.53
Primary/preparatory	72.27	87.02	79.68
Secondary and above	75.86	82.40	79.18
Don't know	73.36	79.85	76.72
Likelihood χ^2	1.40	9.01	4.42
Total	72.26	82.40	77.48

*P < 0.05.

^aAl Wusta was not included due to the low population density and difficulty in accessing it.

Table 3 Distribution of adolescents who knew that 2 years and over is the healthy period for birth spacing by sociodemographic characteristic and sex

Characteristic	Boys (%)	Girls (%)	Total (n = 3114) (%)
<i>Age (years)</i>			
<16	74.35	70.93	72.21
16-	69.44	74.05	72.03
17-	73.95	79.13	76.64
18-	75.65	84.08	79.90
19 and above	74.36	80.64	76.77
Likelihood χ^2	8.95	20.21*	20.05*
<i>Secondary school grade</i>			
First	66.77	69.04	67.93
Second	73.00	80.82	76.79
Third	83.33	86.06	84.85
Likelihood χ^2	38.82*	53.1*	90.77*
<i>Region^a</i>			
Muscat	72.55	76.41	74.54
Dhofar	72.53	83.24	78.75
Ad Dakhliya	78.28	78.21	78.25
North Ash Sharqiyah	75.85	72.95	74.23
South Ash Sharqiyah	65.22	76.59	70.76
North Al Batinah	67.96	74.78	71.55
South Al Batinah	74.83	82.19	78.89
Adh Dhahira	81.45	87.64	84.00
Musandam	56.50	56.23	56.38
Likelihood χ^2	28.4*	27.79*	41.86*
<i>Mother's education</i>			
Illiterate	77.04	78.78	77.90
Read & write	68.93	78.06	74.23
Primary/preparatory	72.18	79.53	76.22
Secondary and above	72.58	79.07	75.80
Don't know	54.69	59.56	56.75
Likelihood χ^2	36.47*	21.48*	52.59*
<i>Father's education</i>			
Illiterate	76.97	78.35	77.62
Read & write	74.30	76.79	75.68
Primary/preparatory	74.43	78.92	76.70
Secondary and above	73.67	82.33	78.03
Don't know	55.03	70.81	63.02
Likelihood χ^2	42.66*	11.931	44.34*
Total	73.18	77.90	75.60

*P < 0.05.

^aAl Wusta was not included due to the low population density and difficulty in accessing it.

Table 4 Distribution of adolescents who agreed that female genital cutting was healthy and important by sociodemographic characteristic and sex

Characteristic	Boys (%)		Girls (%)		Total (n = 3114) (%)	
	Highly agree	Agree	Highly agree	Agree	Highly agree	Agree
<i>Age (years)</i>						
<16	43.04	32.47	46.26	31.69	45.03	31.99
16-	48.22	29.53	46.61	32.08	47.31	30.97
17-	46.12	38.50	45.09	37.73	45.58	38.10
18-	47.58	34.42	44.36	34.14	45.93	34.27
19 and above	44.11	36.66	44.64	34.03	44.31	35.65
Likelihood χ^2	6.69		5.64		13.6	
<i>Secondary school grade</i>						
First	49.68	28.24	49.97	32.50	49.83	30.40
Second	44.97	38.13	41.50	36.37	43.27	37.27
Third	43.55	37.68	43.41	35.08	43.47	36.22
Likelihood χ^2	14.07*		8.54		14.41*	
<i>Region^a</i>						
Muscat	52.96	29.90	39.43	30.35	46.01	30.13
Dhofar	35.19	42.09	47.34	40.72	42.34	41.29
Ad Dakhliya	50.72	30.59	50.05	35.75	50.39	33.17
North Ash Sharqiyah	47.41	26.10	48.76	21.23	48.21	23.22
South Ash Sharqiyah	55.24	35.11	50.80	38.37	53.06	36.71
North Al Batinah	38.57	39.73	40.99	39.04	39.83	39.37
South Al Batinah	47.28	36.45	48.05	35.81	47.71	36.09
Adh Dhahira	44.48	31.13	49.16	26.57	46.40	29.26
Musandam	38.78	45.68	36.23	60.29	37.65	52.15
Likelihood χ^2	32.25*		65.82*		70.67*	
<i>Mother's education</i>						
Illiterate	44.21	36.05	45.82	37.13	45.01	36.59
Read & write	43.66	34.73	45.34	35.72	44.63	35.30
Primary/preparatory	50.43	33.88	48.28	32.57	49.24	33.16
Secondary and above	46.66	25.00	32.89	21.33	39.85	23.18
Don't know	58.60	27.79	42.42	28.45	51.88	28.06
Likelihood χ^2	16.72*		43.21*		42.69*	
<i>Father's education</i>						
Illiterate	45.92	35.60	46.50	39.08	46.20	37.28
Read & write	49.87	31.05	46.74	32.20	48.13	31.69
Primary/preparatory	42.66	38.59	47.32	33.93	45.02	36.23
Secondary and above	42.11	33.22	37.92	33.51	40.01	33.37
Don't know	54.12	30.78	44.44	35.94	49.17	33.42
Likelihood χ^2	12.44		21.87*		26.004*	
Total	46.47	34.12	45.29	34.51	45.86	34.32

*P < 0.05.

^aAl Wusta was not included due to the low population density and difficulty in accessing it.

Discussion

The study indicates positive as well negative aspects of the knowledge and attitude of adolescents on a variety of subjects. It also provides insight into problems faced by the group and gives some indication of areas needing intervention, which could be addressed through information, education and communication activities.

Among the positive aspects are the good knowledge of modern contraceptives and a favourable attitude towards future use for child spacing. Although the average number of children desired by the girls was high (4.3 children), it is lower than the figure reported by ever married women in the Oman Family Health Survey, 1995 (6.4 children) [7] and that reported by ever-married women in the National Health Survey, 2000 (5.5 children) [8].

The lack of adolescents' reproductive health knowledge, primarily of puberty changes, sexuality and their STI vulnerability, needs to receive higher recognition [9]. For example, the fact that only 19% of the girls considered puberty changes normal needs to be addressed. In addition, only 23% knew about the changes before puberty. Adolescents are usually uncertain where to go to get appropriate information and services on reproductive health, including sexual health and family planning. This happens even when they know and learn about the dangers of certain practices and the need for practising safe sex and contraception. Many issues related to reproductive health are still treated with a certain amount of secrecy and reticence in many parts of the world. For example, sexual health is a neglected component of reproductive health in Arab countries. This is in spite of the recommendations of experts, which stress complete frankness with adolescents, especially in the prepubescent period, in order

to enable them to accept the natural changes in a healthy manner [10–12]. Consequently, girls in particular often meet these physical and emotional changes with apprehension. As regards STIs, a considerable percentage of adolescents sampled in other studies in developing and developed countries have reported being sexually experienced [10–12]. Accordingly, knowledge gaps in the mode of transmission of STI, as revealed in the current study, need to be filled.

A negative aspect that needs special focus is the high rate of approval for female genital cutting by both sexes.

It should be noted that the findings of this survey cannot not be generalized to the entire adolescent population in Oman, as this was a school-based survey, although 78.8% of adolescent population is enrolled in school and hence it is an easy population to access [13]. The reason for not including preparatory school adolescents in the study was based on our understanding that secondary-school adolescents would be more confident and bold in expressing their thoughts, feelings and views. To the best of our knowledge, this study is the first of its kind in a Gulf Cooperation Council country investigating adolescents' knowledge and attitudes towards different reproductive health issues. It therefore provides the first real data on adolescents' beliefs and practices that could be used policy-makers to address adolescent health, acknowledging the potential of adolescents to act as agents for social change. The current demographic trend of a rapidly growing young population will increase the impact of adolescent health issues.

Areas needing improvement and change include adolescents' knowledge of the physiological changes in puberty in both sexes, their concept of the ideal family size and their knowledge of the association of consanguinity and genetic disorders.

There is a need for an intersectoral, holistic approach to adolescent health involving all sectors including the health, education, youth, sports, social welfare sectors as well as the media. The formulation of a national policy for adolescents should be considered as a long-term requirement. A national intersectoral committee should be established and charged with the responsibility of raising the quality of life of adolescents to prepare them for their future lives. [14] Finally, Senderowitz concluded in her review that adolescent reproductive health programmes should be designed to move from a scattered, one-time effort into a more sustainable and comprehensive effort using multiple interventions [1], a view which we wholly endorse. Programme planners must undertake preparatory actions to foster an enabling environment before introducing an adolescent reproductive health intervention. Mass media and informal communication can be selectively used at all levels of

programme readiness and development. Further research is needed to better understand the potential for alternative venues to provide adolescent reproductive health education and services and ways in which programmes can be expanded, scaled up and evaluated.

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Nutrition in adolescence – issues and challenges for the health sector. Issues in Adolescent Health and Development

The Department of Child and Adolescent Health and Development in collaboration with other WHO departments initiated a process of reviewing the literature in order to identify existing recommendations on clinical management, and to assess how appropriate these are for adolescents across a wide range of health issues. The review process resulted in the production of a number of Discussion Papers, the latest of which is *Nutrition in adolescence – issues and challenges for the health sector*. The overall purpose of this document is to present the factors and current thinking which underlie WHO's recommendations for the prevention of nutritional disorders in adolescents, and for their early detection, diagnosis and appropriate management. The focus throughout the document is on adolescents in developing countries, and this means addressing nutritional problems that are common to high, middle, and low-income groups, as well as those that are spreading throughout the world as a result of globalization. Although much of the research into the various factors of nutritional risk in adolescents has been carried out in high-income countries, many of the findings are also of relevance to middle and low-income settings. This document is available on line at: http://www.who.int/child-adolescent-health/New_Publications/ADH/ISBN_92_4_159366_0.pdf