

Adolescents' attitudes toward gender roles and women's empowerment in Oman

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موقف المراهقين تجاه أدوار الجنسين وتمكين المرأة في عُمان

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الخلاصة: تستقصي هذه الدراسة مواقف المراهقين العُمانيين تجاه أدوار الجنسين وتمكين المرأة من حيث اتخاذ القرارات في الأسرة، والعوامل المحددة لمواقفهم الإيجابية. وفي إطار الدراسة، قامت عينة وطنية تمثل المدارس الثانوية، قوامها 1670 شاباً و1675 فتاة، بالإجابة عن استبيان ذاتي الاستكمال ذي منسبين، هما: موقف المراهقين تجاه أدوار الجنسين، وموقف المراهقين تجاه تمكين المرأة. وتضمن الاستبيان أسئلة أخرى حول المعطيات الديمغرافية، وأنماط الحياة التي تنطوي على سلوك محفوف بالمخاطر، للتعرف منها على الصحة النفسية والبيئة الاجتماعية اللتين يمكن أن تُستنتج منهما المواقف تجاه أدوار الجنسين. وخلصت الدراسة إلى وجود ثمانية متغيرات تنبئ عن أحراز عالية في كلا المنسبين، وهي: الجنس، والعمر، والشريحة الاجتماعية الاقتصادية، ومشكلات النوم، والاعتزاز بالنفس، والتدخين، وسوابق الانخراط في سلوك عنيف، والعلاقة بين الوالدين.

ABSTRACT This study investigated the attitudes of Omani adolescents towards gender roles and women's empowerment in taking household decisions, and the determinants of their positive attitudes. A national representative secondary school-based sample of 1670 boys and 1675 girls completed a self-administrated questionnaire with 2 indices: Adolescents' Attitudes Towards Gender Roles and Adolescents' Attitudes Towards Women's Empowerment. Other questions included demographic data, risk behaviour lifestyle, proxies to mental health and social environments expected to predict attitudes towards gender role. Eight variables predicted higher scores in both indices: sex, age, socioeconomic class, sleep problems, self-esteem, current smoking, history of indulging in violent behaviour and parental relations.

Attitudes des adolescents à l'égard des rôles de l'homme et de la femme et de l'autonomisation de la femme

RÉSUMÉ La présente étude a examiné les attitudes des adolescents omanais à l'égard des rôles de l'homme et de la femme et de l'autonomisation de la femme dans la prise de décisions au sein du ménage, et les déterminants de leurs attitudes positives. Un échantillon national représentatif de 1670 garçons et de 1675 filles des écoles secondaires a rempli un auto-questionnaire comportant deux indices : les attitudes des adolescents à l'égard des rôles de l'homme et de la femme et les attitudes des adolescents à l'égard de l'autonomisation de la femme. Les autres questions comprenaient des données démographiques, le mode de vie associé à des comportements à risque, des indications indirectes liées à la santé mentale et l'environnement social qui devraient permettre de prédire les attitudes à l'égard des rôles attribués aux hommes et aux femmes. Huit variables prédisaient des scores plus élevés pour les deux indices : le sexe, l'âge, la classe socio-économique, les problèmes de sommeil, l'estime de soi, le tabagisme au moment de l'enquête, des antécédents de comportements violents et les relations parentales.

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Introduction

In recent years, women's health has become an increasingly visible and important policy issue [1]. In 2002, the World Health Organization (WHO) issued its first gender policy statement, acknowledging the gender issue as important in its own work [2]. At about the same time, WHO began using the United Nations (UN) Millennium Development Goals, which go beyond the "health for all" framework's focus on equality in general, specifying more particularly that gender equality and the empowerment of women are vital goals (goal 3) [3].

The International Conference on Population and Development in Cairo in 1994 stated that the most important single component that a nation can invest in to improve its life and health is the education of girls and women [4]. The conference highlighted the now commonly understood links between education, women's empowerment and demographic indicators [5,6].

Oman still faces a high rate of adolescent marriage and a high total fertility rate: 4.8 in 2000, albeit a drop from 7.05 in 1995 [7]. Addressing the issue of women's empowerment and its proxies is a factor in reducing fertility rates. Al Riyami and Afifi [8] showed that almost half of ever-married women studied were empowered in taking only 4 out of 8 household decisions. They concluded that the degree of women's empowerment in household decision-making was significantly associated with fewer children ever-born and a longer birth interval, adjusting for other fertility determinants such as women's age, level of education and residence [8].

Examining adolescents' attitudes toward gender issues would not only inform us about the future status of women's empowerment in Oman but also would shed

light on reproductive behaviour and economic factors such as women's participation in the labour force in future generations.

The aim of the study reported here was to investigate the attitudes of Omani adolescents towards gender roles and women's empowerment in taking household decisions, and to study the determinants of their positive attitudes. The study is part of a national survey by the Department of Family and Community Health, Ministry of Health (MoH) in collaboration with other Omani ministries, WHO and the UNICEF offices in Oman. The overall goal of the survey was to establish a database of adolescents' knowledge, attitude and practices towards reproductive health and healthy lifestyles in order to enhance policies and programmes directed to this age group in Oman [9].

Methods

A secondary school-based questionnaire survey of adolescents' attitudes was conducted in April 2001 on a national representative sample of both sexes.

Sampling

A multi-stage stratified random sampling technique was adopted and a sample size was calculated, assuming that the least prevalent variable to be studied was 5% at 90% confidence interval. The sample size was distributed in proper allocation of the number of students in each governorate and grade in different strata and the primary sampling unit was the school class where 11 students from each class were selected randomly. Accordingly, 1670 adolescent boys (3.3% out of 50 716) and 1675 adolescent girls (3.1% out of 54 192) were selected as representative of secondary school adolescents in Oman aged 13 to

19+ years (a few pupils were over 20 years). The response rate was 89% among boys and 97% among girls, giving a final sample of 1485 boys and 1629 girls. To avoid the non-response bias from students being absent on the day of the survey, sample weights were used in the data analysis.

Survey tools

A self-administrated questionnaire was answered by all selected boys and girls, covering the following topics: puberty, marriage issues, birth spacing, sexually transmitted diseases and HIV/AIDS, female circumcision, sources of information on reproductive health, risk behaviour life-style, social upbringing and relations, the role of schools and school health services. The questionnaire, which took from 1 to 1.5 hours to complete, was based on the Youth Risk Behavior Survey [10], adapted to cover knowledge and attitudes in the local context. The questions were refined during a 2-week WHO training of 32 researchers from the MoH and the tool was piloted in 2 regions: Muscat and South Batinah. In this paper, we focus of the special tools used in this study.

Adolescents' Attitude Towards Gender Roles (ATGR) index. To examine the adolescents' attitudes toward gender roles, adolescents of both sexes were asked 11 questions on the different roles played by or expected from women or men in the community. Possible responses were: highly agree, agree, disagree or highly disagree (scored from 1–4), and the total score could range from 11 (negative, traditional or non-egalitarian attitudes towards female gender roles) to 44 (positive attitudes). Including missing answers, the actual index score range was 4–42 with a mean of 29.5 [standard deviation (SD 4.4)]; alpha Cronbach reliability 0.56.

Adolescents' Attitude Towards Women's Empowerment in Household Decisions (ATWE) index. To understand the adolescents' attitudes toward women's empowerment in household decisions, adolescents of both sexes were asked about "who has the final say on..." 7 items related to household decision-making. Possible responses were: husband only has the final say, wife has final say, both partners together or other people in the family (scored 2 for both partners and 1 for any other option). The total score could range from 7 (negative attitudes towards women's empowerment) to 14 (positive attitudes). The actual index score range was 7–14 with a mean of 11.56 (SD 1.74); alpha Cronbach reliability 0.62.

Adolescents' self-esteem and self-confidence index. The adolescents were asked 9 questions about their self-esteem, self-confidence and ability to solve their problems; whether they were optimistic about their future; whether they were respected by their parents; and their readiness to express themselves to their parents or others are not sharing their same opinion. Possible responses were: highly agree, agree, disagree or highly disagree (scored from 1–4). The index score could range from 9 (low self-esteem and confidence) to 36 (high self-esteem). The actual index score was 14–36 with a mean of 28.87 (SD 3.0); alpha Cronbach reliability 0.31 (not satisfactory).

Socioeconomic index. The socioeconomic index constituted of 8 variables: father's education, mother's education, father's work status, mother's work status, family income, whether family income is sufficient, type of accommodation and car ownership. Each variable was scored and total scores were classified into 3 socioeconomic strata: 4–9 (low socioeconomic status), 10–17 (middle) and 18 or above (high). The total score ranged from

4–28, with a mean of 13.2 (SD 3.54); alpha Cronbach reliability 0.59.

The ATGR and ATWE indices were used in our statistical models as the output or dependent variables. The independent variables or the predictors were 19 variables, categorized into 4 groups:

1. Demographic data (sex, age, socioeconomic class).
2. Mental health proxies (sleep problems, low self-esteem and confidence, negative traits such as anxiety, depression, sadness or frustration), positive traits (such as satisfaction, happiness, success, peace with oneself).
3. Risk-taking behaviours (current or ever smoking, driving car without a licence, driving at speed, history of violent behaviour the month before the survey, being persuaded in the past to take illicit drugs by peers, ever drinking alcohol).
4. Social environment (pattern of parental relations, how parents treat them, witnessing violence in family, witnessing violence among friends, history of being punished by physical abuse).

Data analysis

Data entry personnel were trained before embarking on data entry. Data entry was done using *ISSA* and data analysis using *SPSS*, version 6.0. In bivariate analysis, data were presented in percentages and means. The likelihood chi-squared test examined the distribution of data, while group means were compared using ANOVA. Multiple linear regression was conducted to test the most important associated factors with the studied dependent continuous variables (ATGR and ATWE). The 19 independent variables used in the regression models were dichotomous (after recoding some of them to be so), categorical or continuous. A *P* value of ≤ 0.05 was considered statistically significant.

Results

About 48% of the sample was boys and the mean age was 17.1 (SD 1.4) years, range 13–24 years. The majority of the sample (72%) was of middle socioeconomic class according to the index applied.

Behaviour

About 40% of the sample reported suffering 1 or more negative traits (anxiety, depression, sadness or frustration), while 63.0% reported 1 or more positive traits (satisfaction, happiness, success, peace with oneself). The majority reported some sleep problems (85.0%). As regards risk behaviour lifestyle, boys outnumbered girls for all variables; 4.6% overall were current smokers (6.4% boys, 2.9% girls) and 14.9% were ever-smokers (26.2% boys, 3.8% girls), while 4.3% had a history of ever-drinking alcohol (6.6% boys, 2.0% girls), and 4.6% have ever-taken illicit drugs (7.2% boys, 2.2% girls). About 20% (22.9% boys, 17.9% girls) shared in 1 or more physical fights the month before the survey, 33.4% drove cars without a licence (57.5% boys, 12.2% girls) and 33.9% liked to drive at speed (42.1% boys, 26.3% girls). The majority of the adolescents (61.0%) reported that their parents agree together all or most of the time and 80.0% that their parents treated them with love, respect and equality between them and other siblings. However, 8.2% had experienced physical punishment (12.5% boys, 3.7% girls). Moreover, the majority witnessed violence in their families and among their friends sometimes or always (72.7% and 66.0% respectively).

Gender roles and household decision-making

Tables 1 and 2 show the distribution of responses to the attitude indices among boys

Table 1 Responses on the Adolescents' Attitude Towards Gender Roles index

Item	No. of respondents	Responses to item			
		Highly agree %	Agree %	Disagree %	Highly disagree %
<i>Wife must get husband's approval in everything</i>					
Boys	1474	49.3	37.6	9.6	3.5
Girls	1582	36.9	46.4	13.0	3.7
All respondents	3094	42.8	42.2	11.4	3.6
$\chi^2 = 49.74, P < 0.001$					
<i>Husband must take all important decisions alone</i>					
Boys	1460	13.6	25.7	44.5	16.2
Girls	1615	4.0	14.4	48.2	33.4
All respondents	3075	8.6	19.8	46.4	25.2
$\chi^2 = 232.20, P < 0.001$					
<i>Husband must help wife with housework, especially if she works</i>					
Boys	1465	25.2	62.0	9.4	3.3
Girls	1614	29.4	62.8	5.9	1.9
All respondents	3079	27.4	62.4	7.6	2.6
$\chi^2 = 23.96, P < 0.001$					
<i>Wife must be allowed to work if she wants to</i>					
Boys	1460	8.3	38.6	34.0	19.2
Girls	1615	21.2	58.1	16.2	4.5
All respondents	3075	15.1	48.8	24.7	11.5
$\chi^2 = 399.74, P < 0.001$					
<i>Wife must accept husband's views even she does not agree</i>					
Boys	1457	25.5	36.0	28.1	10.4
Girls	1612	15.8	34.3	37.6	12.3
All respondents	3069	20.4	35.1	33.1	11.4
$\chi^2 = 58.68, P < 0.001$					
<i>Wife must accept having another child according only to husband's wish</i>					
Boys	1459	13.0	31.3	42.0	13.7
Girls	1614	6.9	32.5	43.6	17
All respondents	3073	9.8	32	42.9	15.4
$\chi^2 = 35.29, P < 0.001$					

Table 1 Responses on the Adolescents' Attitude Towards Gender Roles index (concluded)

Item	No. of respondents	Responses to item			
		Highly agree %	Agree %	Disagree %	Highly disagree %
<i>Wife with no boys must continue conceiving until she has one</i>					
Boys	1463	10.7	27.1	36.5	25.7
Girls	1620	6.5	23.5	40.8	29.3
All respondents	3083	8.5	25.2	38.8	27.6
$\chi^2 = 27.25, P < 0.001$					
<i>Boys' education is more important than girls' education</i>					
Boys	1474	12.8	15.5	34.1	37.5
Girls	1621	4.4	5.6	20.5	69.5
All respondents	3095	8.4	10.3	27.0	54.3
$\chi^2 = 345.48, P < 0.001$					
<i>Opportunities must be given to women to take top positions</i>					
Boys	1468	30.7	9.1	33.7	26.6
Girls	1621	42.3	24.3	22.0	11.4
All respondents	3089	36.8	17.1	27.5	18.6
$\chi^2 = 272.81, P < 0.001$					
<i>Household decisions are taken by both partners</i>					
Boys	1472	45.8	49.1	3.1	2.0
Girls	1610	35.7	61.2	1.8	1.4
All respondents	3082	40.5	55.4	2.4	1.7
$\chi^2 = 47, P < 0.001$					
<i>Husband's opinion is more important in taking important decisions</i>					
Boys	1455	48.4	21.9	20.8	8.9
Girls	1603	33.8	9.7	34.9	21.6
All respondents	3058	40.7	15.5	28.2	15.5
$\chi^2 = 252.51, P < 0.001$					

and girls. Girls were more likely to have positive attitudes toward gender roles and women's empowerment in household decisions than boys. Likelihood chi-squared tests showed significant differences in distribution between boys and girls even when

aggregating "highly agree" and "agree" versus "disagree" and "highly disagree" for the gender roles (ATGR) index or aggregating "wife" and "both partners" versus "husband" and "others" for the decision-making (ATWE) index.

Table 2 Responses on the Adolescents' Attitude Towards Women's Empowerment in Household Decisions index

Item	No. of respondents	Responses to who has final decision about item			
		Husband %	Wife %	Both together %	Others %
<i>Managing family income</i>					
Boys	1482	42.3	7.4	50.2	0.1
Girls	1620	25.4	4.6	69.9	0.2
All respondents	3102	33.5	5.9	60.5	0.1
$\chi^2 = 128.1, P < 0.001$					
<i>Wife wants to work</i>					
Boys	1475	73.4	4.5	21.2	0.9
Girls	1617	58.1	3.6	37.3	1.1
All respondents	3092	65.4	4.0	29.6	1.0
$\chi^2 = 98.2, P < 0.001$					
<i>Number of children</i>					
Boys	1470	13.2	11.6	74.8	0.4
Girls	1612	3.4	6.5	89.7	0.4
All respondents	3082	8.1	8.9	82.6	0.4
$\chi^2 = 138.36, P < 0.001$					
<i>Highest educational level for girl</i>					
Boys	1465	15.2	18.2	63.7	2.9
Girls	1609	7.9	16.7	70.9	4.5
All respondents	3074	11.4	17.4	67.4	3.8
$\chi^2 = 48.49, P < 0.001$					
<i>Highest educational level for boy</i>					
Boys	1463	28.0	7.8	61.2	3.0
Girls	1607	18.5	3.0	74.4	4.2
All respondents	3070	23.0	5.3	68.1	3.6
$\chi^2 = 86.47, P < 0.001$					
<i>Using family planning methods</i>					
Boys	1468	14.4	17.2	66.3	2.1
Girls	1608	6.8	16.5	75.8	0.8
All respondents	3076	10.5	16.8	71.3	1.4
$\chi^2 = 62.12, P < 0.001$					
<i>Health care for children</i>					
Boys	1478	4.4	24.1	69.4	2.2
Girls	1649	1.2	19.8	77.8	1.2
All respondents	3097	2.7	21.8	73.7	1.7
$\chi^2 = 47.39, P < 0.001$					

Similarly, the mean scores on the ATGR index differed significantly between adolescent boys and girls as well as between different socioeconomic groups, age groups and almost all variables in Table 3 except for having negative traits and witnessing violence among friends. Taking sex as a covariate in ANOVA testing, the difference in means between the groups of variables shown in the same table the majority of the significant *F* statistics either became less significant, as in "Witnessed violent behaviour last month", or even became non-significant as in "Ever-smoker" or "Ever-used alcohol". This denotes that sex is a major confounder with all the predictors or determinants of gender roles. The same was true for the predictors of the ATWE index, except that the mean scores of women's empowerment did not differ significantly between boys and girls in a considerable number of variable groups which already showed significant difference with gender roles in Table 1, e.g. "Positive traits", "Likes to drive at speed", "Ever-used alcohol", "How parents treat me" and "Witnessed violence in family" (Table 3).

These results can be explained if the ATGR and ATWE indices, albeit positively and significantly correlated ($r = 0.28$, $P = 0.001$), were sometimes determined by different variables. This was also confirmed by the findings of multiple linear regression analysis where we found different significant predictors of high scoring in ATGR and ATWE for each sex and the overall sample (data not shown in table). Moreover, variables predicting high scores for both indices for the overall sample did not all predict the same for each sex group. Significant predictors of a high score of ATGR among boys were self-esteem and current smoking, while only parental relations predicted it among girls.

For the overall sample, sleep problems, self-esteem, current smoking and parental relations predicted high ATGR scores. Predictors of high ATWE scores among boys were socioeconomic class, age, sleep problems, self-esteem, current smoking and parental relations. Among girls, only socioeconomic status and violent behaviour the month before the survey were significant. For the overall sample, sex, socioeconomic class, self-esteem, current smoking, violent behaviour and parental relations predicted ATWE scores. Current smoking as a proxy of risk behaviour had an inverse association with high scores in both indices for the boys' sub-sample and the overall sample adjusted to other variables in the model. High scores of self-esteem, controlled for the other variables, predicted high scores in both indices for the same sex group as well as the overall sample. Higher social class predicted higher ATWE scores for both sexes and the overall sample, while older boys were more likely to have a higher score in the same index.

Out of the 19 variables entered into the models, only 8 predicted higher scores in both indices and were categorized into 4 groups: demographic variables (sex, age, socioeconomic class); mental health proxies (sleep problems, low self-esteem); risk-taking behaviour (current smoking and history of indulging in violent behaviour the month before the survey); and social environment (pattern of parental relations).

Discussion

Little attention has been given to adolescents' gender role attitudes in the Gulf countries and therefore the current study, to the best of our knowledge, is the first of its kind. The study arose from a growing

Table 3 Comparison between mean score on Adolescents' Attitude Towards Gender Roles index and the Adolescents' Attitude Towards Women's Empowerment in Household Decisions index and associated factors tested by ANOVA

Variable	No.	%	Gender roles index			Women's empowerment index		
			Mean score	F-value (unadjusted)	F-value (adjusted for sex)	Mean score (unadjusted)	F-value (unadjusted)	F-value (adjusted for sex)
<i>Sex</i>								
Boys	1485	47.7	27.6	602.3**	NA	11.09	209.7**	NA
Girls	1629	52.3	31.2			11.98		
<i>Socioeconomic class</i>								
Low	446	14.3	29.2	5.68**	6.17**	11.37	9.39**	9.05**
Middle	2270	72.9	29.5			11.53		
High	398	12.8	30.1			11.88		
<i>Age (years)</i>								
13-	274	9.0	30.1	6.69**	NS	11.75	2.99*	NS
16-	796	26.1	29.9			11.61		
17-	847	27.8	29.4			11.52		
18-	701	23.0	29.4			11.62		
19+	431	14.1	28.8			11.34		
<i>Negative traits (self-reported)</i>								
0	1854	59.9	29.4	3.11*	NS	11.56	NS	NS
1	1145	37.0	29.8			11.55		
2+	97	3.1	29.8			11.51		
<i>Positive traits (self-reported)</i>								
0	1129	36.5	29.8	NS	NS	11.54	NS	NS
1	1845	59.6	29.4			11.55		
2+	122	3.9	29.8			11.76		
<i>Sleep problems</i>								
Never	456	14.7	28.8	7.59**	4.06**	11.42	3.43*	NS
Rarely	786	25.5	29.4			11.54		
Sometimes	1484	47.9	29.9			11.65		
Always	369	11.9	29.3			11.39		
<i>Current smoker</i>								
No	2537	95.4	29.6	36.0**	22.4**	11.57	19.7**	13.6**
Yes	123	4.6	27.1			10.82		
<i>Ever-smoker</i>								
No	2478	85.5	29.8	56.4**	NS	11.63	31.2**	NS
Yes	419	14.5	28.1			11.11		
<i>Drives without licence</i>								
No	1991	66.2	30.2	137.5**	NS	11.69	25.2**	1.02*
Yes	1017	33.8	28.3			11.35		

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Table 3 Comparison between mean score on Adolescents' Attitude Towards Gender Roles index and the Adolescents' Attitude Towards Women's Empowerment in Household Decisions index and associated factors tested by ANOVA (continued)

Variable	No.	%	Gender roles index			Women's empowerment index		
			Mean score	F-value (unadjusted)	F-value (adjusted for sex)	Mean score	F-value (unadjusted)	F-value (adjusted for sex)
<i>Likes to drive at speed</i>								
No	2007	66.4	29.8	16.3*	NS	11.61	NS	NS
Yes	1014	33.6	29.1			11.51		
<i>Witnessed violent behaviour last month</i>								
No	2351	79.9	29.7	8.38**	NS	11.63	17.0**	11.1**
Yes	590	20.1	29.1			11.31		
<i>Ever-used drugs</i>								
No	2813	95.5	29.7	13.0**	NS	11.60	21.0**	9.35**
Yes	132	4.5	28.3			10.89		
<i>Ever-used alcohol</i>								
No	2853	95.8	29.7	11.4**	NS	11.58	NS	NS
Yes	126	4.2	28.3			11.43		
<i>Parent's relations</i>								
Always agree	913	29.9	28.8	8.49**	4.75**	11.31	6.30**	4.13**
Agree most of the time	951	31.1	29.6			11.62		
Conflict sometimes	298	9.7	30.0			11.60		
Conflict always	586	19.2	30.4			11.79		
Separated/divorced	183	6.0	30.2			11.75		
One deceased	126	4.1	29.7			11.57		
<i>How parents treat me</i>								
With love	1448	47.1	29.3	5.48**	NS	11.47	NS	NS
Equally with other siblings	1008	32.8	29.8			11.69		
Only interested in education	246	8.0	29.2			11.49		
Neglect me	88	2.9	28.5			11.42		
With discrimination	202	6.6	30.6			11.63		
With cruelty	80	2.6	29.1			11.52		

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Table 3 Comparison between mean score on Adolescents' Attitude Towards Gender Roles index and the Adolescents' Attitude Towards Women's Empowerment in Household Decisions index and associated factors tested by ANOVA (concluded)

Variable	No.	%	Gender roles index			Women's empowerment index		
			Mean score (unadjusted)	F-value	F-value (adjusted for sex)	Mean score (unadjusted)	F-value	F-value (adjusted for sex)
<i>Witnessed violence in family</i>								
Never	705	27.5	29.5	NS	NS	11.57	NS	NS
Sometimes	1360	53.1	29.7			11.61		
Always	496	19.4	29.5			11.53		
<i>Witnessed violence among friends</i>								
Never	816	34.0	30.0	12.0**	NS	11.62	5.66**	NS
Sometimes	1086	45.3	29.3			11.58		
Always	496	20.7	28.9			11.30		
<i>Ever punished physically</i>								
No	2132	91.9	29.5	16.5**	NS	11.57	15.5**	4.50*
Yes	188	8.1	28.1			11.03		

*P < 0.05; **P < 0.01.

n = 3114 (the total sample) but data were missing in all the variables.

NA = not applied; NS = not significant.

concern about women's empowerment and its impact on demographic transition in Oman. For example, previous studies have demonstrated that only a minority of women were empowered to take a decision about family planning alone or with their husband [8,11,12]. Men still have the final say on use of family planning methods or in having another child. Whether Omani adolescents adhere to the authoritarian nature of men's relationship with their wives was the question considered in this study.

The study suggests that Omani boys conform to the traditional notions of what is expected from males and females in Arab society. Girls were significantly more likely to express egalitarian attitudes. The same was found by Mensch et al. in Egypt [13].

In our study, increased schooling, as measured indirectly by increasing age, predicted non-traditional attitudes towards women's empowerment in household decisions only for boys and did not have any significant effect among girls or in the gender roles index. Our findings are consistent with Mensch et al., who concluded that schooling does not always promote egalitarian attitudes among adolescents [13], as well as other studies on the determinants of gender roles among married women in developing countries [14,15]. As Wassef has mentioned [16], despite recent revisions made to enhance the image of women in school textbooks, the school curriculum in these countries reinforces traditional gender roles. However, women's educational

level was shown to affect their decision-making in the family in another study in Egypt [17]. Higher socioeconomic class significantly predicted higher positive gender attitudes in the bivariate as well as in the multivariate model [17]. This finding, albeit not consistent with Mensch et al., was defended in Ecri's study by mentioning that improvement in economic conditions can challenge traditional gender attitudes and discrimination.

Higher self-esteem scores among adolescents predicted more non-traditional attitudes towards gender, which is consistent with Ali and Toner's study of Muslim women in Canada [18]. They concluded that higher self-esteem scores were associated with stronger attitudes against wife abuse, independent of the sex of the respondents. Witnessing or taking part in violent acts the month before the survey was a significant predictor of a traditional gender attitude in the current study. Similarly, a study of incarcerated juvenile offenders in the United States of America (USA) found a statistically significant relationship between sex-role attitudes and propensity towards violence [19]. Specifically, they found that offenders who reported the most traditional attitudes toward women's rights and roles were more apt to report that they would engage in violent acts if they were certain of not being punished.

Current smoking among boys in the current study predicted in some statistical models negative or traditional attitudes toward gender role. However, Waldron and Lye in the USA [20] found that smoking was not related to attitudes toward equal opportunities for women, attitudes toward sex roles or attitudes concerning the parental role. This could be partially explained by

the higher prevalence of smoking among US adolescents compared with these Omani adolescents [10].

One limitation of our study is that the findings of a school-based survey cannot be generalized to the entire youth and adolescent population in Oman. Although education is universal in Oman, adolescents can leave secondary schools. Another limitation is that comparison between these findings and previous studies in Oman or other Gulf countries is limited by the absence of previous studies. Furthermore, we cannot construct an argument that associates some predictors—such as having sleep problems—with gender role attitudes. The difficulty in explaining gender role attitudes is that the data is not longitudinal. Ideally, we would only include variables such as parental education or respondent educational attainment several years prior to the survey. However, some variables as proxies to respondents' mental health could not be ignored.

We conclude that Omani high school male students are less likely to show egalitarian attitudes towards gender roles and women's empowerment than female students. Although the gender roles index and attitudes to women's empowerment index were positively and significantly correlated, both would not necessarily be determined by the same predictors. To promote egalitarian attitudes among Omani adolescents generally, and boys specifically, we need to address many associated social factors, such as strengthening their self-esteem, preventing their involvement in high-risk behaviours (such as violence or smoking) and improving their socioeconomic standards.

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Adolescent Health and Development

WHO, along with its partners, UNICEF and UNFPA, advocate an accelerated approach to promoting the health and development of young people in the second decade of life. The *Common agenda* outlines the action needed to provide adolescents worldwide with the support and the opportunities to:

- Acquire accurate information about their health needs
- Build the life skills needed to avoid risk-taking behaviour
- Obtain counselling, especially during crisis situations
- Have access to health services (including reproductive health services)
- Live in a safe and supportive environment

Central to this approach is the recognition that the underlying causes of young people's health and development problems are closely related. The solutions to these problems are also similar and inter-related. Further information on adolescent health can be obtained at http://www.who.int/child-adolescent-health/OVERVIEW/AHD/adh_over.htm