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Knowledge and understanding of the adolescent health care services among health care professionals in Saudi Arabia

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Abstract
Aim: The study aimed to find out the knowledge and understanding of the adolescent health care services among health care professionals in two major tertiary care hospitals in Saudi Arabia.
Methods: This was a cross sectional study conducted among 400 physicians and nurses of both genders at two major military hospitals at Riyadh and Al Kharaj in Saudi Arabia from July 2017 to March 2018. A close-ended survey was designed and administered to assess variables associated with health care professionals knowledge and understanding.
Results: Various health and social risk problems, including trauma, diabetes, hypertension, bronchial asthma, acne, rhinitis, obesity, underweight, sexual problem, smoking's, substance abuse, domestic violence, eating disorder, mental disorder were highly prevalent among adolescents in Saudi Arabia. Only 6.8% respondents were managed to guess an inclusive age range for the adolescence period (10-19 years). Of the total respondents, 51% thought that a dedicated adolescence healthcare service is needed while only 40.3% of them agreed that such dedicated service can be offered by primary care team.
Conclusion: A dearth of knowledge and understanding about adolescents health care services among the health care professionals in Saudi Arab.

Keywords: adolescent, Saudi Arab, understanding, care team

Introduction

The World Health Organization (WHO) defines adolescents as young people aged 10–19 years. Currently, there are 1.2 billion adolescents globally making up 16% of the world's population [1]. Adolescence is a critical stage of life characterized by rapid biological, emotional, and social development [2, 3]. Evidence from both high and low income countries shows that adolescents and young adults face many barriers which prevent their use of health services [4, 5]. The WHO report suggests that to make progress toward universal health coverage, ministries of health and the health sector more generally will need to transform how health systems respond to the health needs of adolescents [6].

Studies reported that nearly 2 million adolescents die annually from mostly preventable and treatable causes including accidental injuries, suicide, and homicide, making them a critical population for public health intervention [7].

Moreover, the quality of adolescent health is an important determinant of adult well-being. Many behaviors developed during adolescence, such as sexual activity or tobacco use, are continued into later life, impacting adult morbidity and mortality [8]. The WHO estimates that 70% of premature deaths in adulthood are caused by behaviors started during adolescence. Investing in adolescent health is important for the advancement not only of young people, but for their families, their communities, and society at large [9]. Due to this, health profiles and health status change rapidly during this period. Increasingly, adolescence is regarded as central to global health goals. The adolescent population is a key target for primary prevention activities, which creates special health care needs for the population. The health care provider has an important role to play in not only treating health problems but also promoting healthful behaviors and preventing disease [10].

The Kingdom of Saudi Arabia is the biggest country in the Middle East that occupies around four fifths of the Arabian Peninsula and the adolescents comprise 20% out of a 28 million population is between the ages 10–19 years [11]. Though Saudi Arabia has a large adolescent population, adolescent health-care has only been recently introduced to Saudi Arabian health care, yet widespread uptake has been very limited [10]. Health-care providers are key in addressing and providing the necessary health care services for adolescents and health care professionals' mainly general practitioners play an important role in the primary care of adolescents in both community and clinical settings. However, yet studies show that health care professionals possess lack of confidence, skills and knowledge in adolescent health [12].

In comparison with that in the developed countries, the number of research interventions on the knowledge and understanding of the adolescent health care services among health care professionals in Saudi Arabia woefully inadequate. Hence, the present study aimed to find out the knowledge and understanding of the adolescent health care services among health care professionals in two major tertiary care hospitals in Saudi Arabia.

Methods

Study design and setting

This was a cross sectional study conducted among 400 physicians and nurses of both genders at two major military hospitals at Riyadh and Al Kharaj in Saudi Arabia from July 2017 to March 2018.

Participants

Physicians and nurses involved in direct patient care at two hospitals were invited to participate in the study.

Data collection

For this study, every member was carefully selected keeping in mind their convenience and availability during their scheduled routine clinic visits. Each participant were completed a self-reported questionnaire. A close ended survey was designed and administered to assess several categorical variables: the healthcare providers age, gender, position (physician, nurse), years of experience, awareness of an adolescent medicine branch (yes or no), their opinion in defining the age group to which adolescents belong (>20 years, 15-20 years, 10-19 years, 5-15 years, or I do not know), and whether having adolescent at home or not.

Moreover, questions about the frequency of encountering adolescents in primary care (commonly, frequently, sometimes, rarely, never), and the types of their common presenting problems (sexual problems, smoking, substance abuse, domestic violence, mental problems were added). The respondent believes of having specialized adolescence health care will be find out, including their opinion of having combined with internal medicine or pediatrics.

Ethical approval

The study was conducted in accordance with the declaration of Helsinki and the protocol of the study was approved by the research ethics committee of Prince Sultan Military Medical City, Riyadh, Saudi Arabia.

Statistical analysis

Data analysis was carried out using Microsoft Excel 2013 (Microsoft Corporation, Seattle, WA, USA) and Statistical Package for Social Sciences version 17 (SPSS Inc., Chicago, IL, USA). In addition to the descriptive analysis $\chi 2$ test performed. Continuous variables are represented as mean values ± SD, while categorical variables are expressed as frequencies and percentages. A p-value of <0.05 considered as statistically significant.

Results

Of the 400 health care professionals, 63.2% were females and 56% were nurses. The ages of the respondents ranged between 22 and 65 years with a mean age (SD) of 38.65 (9.2) years and their years of experience ranged between 1 and 41 with a mean ±SD were 12.49 ±7.85 years. However, while the ages of 36% of the respondents were above 40 years, the experience of 53% was more than 10 years. On the other hand, while only one third of the participants had adolescents at their home at the time of the study, two thirds of the participants reported that they encountered more frequently with adolescents at their practice. Moreover, 80% of the adolescents at the home were distributed evenly between middle and late stages of adolescence. Most of the participants, 47%, thought that adolescence can be defined by puberty, 35.3% thought by the behavior and the rest thought by age. Only 6.8% managed to guess an inclusive age range for the adolescence period. Of the 400 respondents, 47% thought that to offer adolescence dedicated services health care professionals need special training. While 6% of the respondents did not believe in their competency to offer such service, 59.8% believed that they are competent to do so and the remaining believed to some extent in their competency to offer such service (Table 1).

When asked to rate the exposure at workplace to selected health problem among adolescents seeking health care 92.5% rated acne as a common health problem. This was followed by rhinitis, bronchial asthma, trauma and obesity which were rated as common encountered problem among adolescents by 84.3%, 82.3, 81.3% and 79.3%, respectively. On the other hand, health problem like hypertension, substance abuse, domestic violence, sexual problems, and diabetes were described as uncommon by 86.8%, 80%, 78.5%, 77.5 % and 67.3% of the participants, in order. While 57.5% and 52.8% have described underweight and smoking as common problems respectively, 58.3% and 57.8 described eating disorders and mental disorders as uncommon (Table 2).

Comparison of some variables in terms of gender, job category, work experience, encountering with adolescents at home and encountering with adolescents at work place are shown in Table 3. Participants who have adolescent at home at the time of the study were 1.87 times more to believe in the need for such dedicated services than those who have no adolescent at home ($p = 0.004$). In comparison with those encountered with adolescents less frequently at workplace, respondent encountered with adolescents more frequently were 1.59 times more to believe in the need for such services than ($p = 0.028$) (Table 3).

Of the total respondents, 51% thought that a dedicated adolescence healthcare service is needed while only 40.3% of them agreed that such dedicated service can be offered by primary care team. Comparison of some variables in terms of gender, job category, work experience, encountering with adolescents at home and at work place, and beliefs about self-competency about adolescence are shown in Table 4 and Table 5. Consistently enough, participants who have adolescent at home at the time of the study were 1.87 times more likely to believe in the need for such dedicated services ($p = 0.004$). Believing in the need for dedicated adolescents services among respondents encountering more frequently with adolescents were 1.59 times as great as those encountering less frequently with adolescents ($p = 0.028$). On the other hand, compared to nurses, physicians were 1.54 times more likely to believe that such dedicated adolescence care can be offered by primary care. Surprisingly enough, respondents who failed to recognize the exact age range for adolescence were 4.61 time more likely to believe in the need for dedicated adolescent care. Moreover, those who believed that adolescence is to be defined by puberty disagreed significantly to that such dedicated service can be offered by primary care (adjusted $p = 0.0008$). On the other hand, those managed to recognize the exact age range for adolescence were 7.41 times more likely to believe that such dedicated adolescents care can be offered by primary care (Table 4 and Table 5).

Results

Table 1: Basic characteristics and competency in adolescence of the participants

Variables	N	%
Age		
≤ 40 yrs.	256	64.0
>40 yrs.	144	36.0
Gender		
Male	147	36.8
Female	253	63.2
Job category		
Physician	176	44.0
Nurse	224	56.0
Work experience		
Less experienced (≤ 10 yrs.)	188	47.0
More experienced (>10 yrs.)	212	53.0
Encountering with adolescents at workplace		
More Frequently	266	66.5
Less Frequently	134	33.5
Having adolescent at home		
No	275	68.8
Yes	125	31.3
Adolescence can be defined by		
Age	71	17.8
Puberty	188	47.0
Behavior	141	35.3
Age of adolescents range between		
10 – 19 yrs.	27	6.8
Other than 10 – 19 yrs.	373	93.3
HCPs need special training to run adolescents care services	188	47.0
Yes		
No or unsure	212	53.0
HCPs' Self-efficacy to offer specialized adolescents care		
Yes	239	59.8
To some extent	137	34.3
No	24	6.0

HCPs: health care professionals

Table 2: Health problems among adolescents encountered by the participants' at their practice

Health problem	Common n (%)		Uncommon n (%)	
Trauma	325	(81.3)	75	(18.8)
Diabetes	131	(32.8)	269	(67.3)
Hypertension	53	(13.3)	347	(86.8)
Bronchial Asthma	329	(82.3)	71	(17.8)
Acne	370	(92.5)	30	(7.5)
Rhinitis	337	(84.3)	63	(15.8)
Obesity	317	(79.3)	83	(20.8)
Underweight	230	(57.5)	170	(42.5)
Sexual Problem	90	(22.5)	310	(77.5)
Smoking	211	(52.8)	189	(47.3)
Substance Abuse	80	(20.0)	320	(80.0)
Domestic Violence	86	(21.5)	314	(78.5)
Eating Disorder	167	(41.8)	233	(58.3)
Mental Disorder	169	(42.3)	231	(57.8)

Table 3: Distribution of the answers about need for dedicated adolescence care services by the basic characteristic of the participants

	Needed	Not needed	OR (95% CI)	*p*
Age				
=<40 yrs.	124 (48.4%)	132 (51.6%)	0.75 (0.49 - 1.1)	0.172
>40 yrs.	80 (55.6%)	64 (44.4%)		
Gender				
Male	74 50.3%	73 49.7%	0.95 ((0.63 - 1.4)	0.841
Female	130 51.4%	123 48.6%		
Job category				
Physician	96 54.5%	80 45.5%	1.28 (0.8 - 1.9)	0.209
Nurse	108 48.2%	116 51.8%		

Work experience				
≤ 10 yrs. experienced	91 48.4%	97 51.6%	0.82 (0.5 - 1.2)	0.328
>10 yrs. experience	113 53.3%	99 46.7%		
Adolescent at home				
Yes	77 (61.6%)	48 38.4%	1.8 (1.2 - 2.8)	0.004
No	127 (46.2%)	148 (53.8%)		
Adolescents at work place				
More Frequently	146 54.9%	120 45.1%	1.59 (1.0- 2.4)	0.028
Less Frequently	58 43.3%	76 56.7%		

Table 4: Comparison of basic characteristics and beliefs about adolescence to perceived need for dedicated adolescence care service among participants

	Needed	**Not -Needed**	**OR (95% CI)**	***p***
Adolescent at home				
Yes	77 (61.6%)	48 (38.4%	1.87 (1.21- 2.88)	0.004
No	127(46.2)	148 (53.8%)		
Adolescents at work				
More Frequently Less Frequently	146 (54.9% 58 (43.3%	120 (45.1%) 76 (56.7%)	1.59 (1.05 - 2.42)	0.028
Adolescence is defined by				
Age	45 (63.4%)	26 (36.6%)	2.14 (1.22 - 3.76)	0.022
Puberty	84 (44.7%)	104 (55.3%)		
Behavior	75 (53.2%)	66 (46.8%)		
Adolescence age Range is				
10 – 20	22 (81.5%)	5 (18.5%)	0.22 (0.08 - 0.58)	0.001
Other than 10 -20	182(48.8%)	191 (51.2%)		
Need special training				
Agree	156 83.0%)	32 (17.0%)	16.6 (10.1 - 27.4)	0.000
Disagree or Undecided	48 (22.6%)	164 (77.4%)		
Self-efficacy				
Yes	132 (55.2%)	107 (44.8%)	2.99 (1.20 - 7.49)	0.03
To some extent	65 (47.4%)	72 (52.6%)		
No	7 (29.2%)	17 (70.8%)		

Table 5: Relationship between opinion about provision of adolescent care services by primary care and characteristics and beliefs of the participants

Variables	**Agree**	**Disagree or Undecided**	**OR (95% CI)**	***p***
Job category			1.53 (1.02-2.29)	0.037
Physician	81 (46.0%)	95 (54.0%)		
Nurse	80 (35.7%)	144 (64.3%)		
Adolescence is to be define by			2.14 (1.22-3.75)	0.022
Age	45 (63.4%)	26 (36.6%)		
Puberty	84 4 (4.7%)	104 (55.3%)		
Behavior	75 (53.2%)	66 (46.8%)		
Adolescence (Age 10 – 20 yrs.)			0.21(0.08 - 0.58)	0.001
Agree	22 (81.5%)	51 (8.5%)		
Disagree or Undecided	182 (48.8%)	191 (51.2%)		
Need special training			16.6 (10.1- 27.4)	<0.001
Agree	156(83.0%)	32 (17.0%)		
Disagree or Undecided	48 (22.6%)	164 (77.4%)		
Self-efficacy			2.99 (1.19 - 7.49)	0.03
Yes	132 (55.2%)	107 (44.8%)		
To some extent	65 (47.4%)	72 (52.6%)		
No	7 (29.2%)	17 (70.8%)		

Discussion

According to the WHO, "One of the most important commitments a country can make for future economic, social, and political progress and stability is to address the health and development needs of its adolescents. With the increasing burden of non-communicable disease, adolescence is viewed as an opportune time to prevent the onset of certain behaviors and promote healthy states. Although adolescents comprise a considerable portion of Saudi Arabia's population, they have received insufficient attention and indicators of their health status, as a first step in a prevention cycle are unavailable [13]. The present study aimed to find out the knowledge and understanding of the adolescent health care services among health care professionals in two major tertiary care hospitals in Saudi Arabia. The present study showed when asked to rate the exposure at workplace to selected health problem among adolescents seeking health care 92.5% rated acne as a common health problem. This was followed by rhinitis, bronchial asthma, trauma and obesity which were rated as common encountered problem among adolescents by 84.3%, 82.3, 81.3% and 79.3%, respectively. On the other

hand, health problem like hypertension, substance abuse, domestic violence, sexual problems, and diabetes were described as uncommon by 86.8%, 80%, 78.5%, 77.5 % and 67.3% of the participants respectively. While 57.5% and 52.8% have described underweight and smoking as common problems respectively. Earlier research also showed a various health risk behaviors, including dietary and sedentary behaviors, lack of safety measures, tobacco use, bullying, and violence were highly prevalent among adolescents in Saudi Arabia. Almost twenty eight percent of adolescents reported having a chronic health condition, 14.3% reported having symptoms suggestive of depression, 30.0% were overweight/obese, and 95.6% were vitamin D deficient, further a study reported that smoking is vastly prevalent among the Saudi adolescents; 21.3% among males and 4.9% among females [13, 14, 15]. Another study reported that the high prevalence of overweight/obesity is consistent with it being the leading risk factor for disease found among adults in Saudi Arabia and underscores the significance of a life course approach to health [16]. The present study also found that eating disorders 41.8% and 42.3% mental disorders are common among the adolescents, which is concord with previous studies. A study conducted in Jeddah showed that one third of the students (32.9%) were affected by eating disorders [13]. Similar results were observed among the Taif students (35.4%) [17] and students from Damman (29.4%) [18].

In the present study found that only 6.8% of the study population was able to identify the adolescence as per the WHO definition (10-19 years). Previous finding reported that 15% of physicians and nurses in Saudi Arabia correctly identified the age of adolescence as defined by the WHO [10]. Another Saudi study reported that half of the respondents accurately defined the adolescent age group (10–19 years), whereas 28% did not know, 9% defined it as >20 years of age, 7% as 15–20 years, and 6% as 5-15 years [19]. Furthermore, the research carried out in the Arab region has generally excluded important aspects of adolescent health including sexual/reproductive health [20].

The study found that participant with adolescents at home and meeting adolescents at work place reported that adolescents care services are needed in Saudi Arabia (p=0.004 and p=0.028). A survey from Saudi Arabia showed that health care professionals in the Saudi Arabia have a clear perception about the need for specialized adolescent health services. Therefore, provision of adolescent health services should be supported by health policy-makers [19]. The present study also reported that 66.5% health care professionals more frequently contact with adolescents and 33.5% less frequently contact with adolescents at their workplace. A Web-based study carried out at four hospitals in Saudi Arabia among physicians and nurses showed that majority of respondents (82.3%) reported that they had contact with adolescent patients sometimes or always, wereas, 17.7% reported never or rarely having contact. Nurses (58.2%) reported more regular contact with patients between the ages of 12 and 18 years than physicians (27.5%). Pediatric physicians (16.1%) reported having significantly less contact with patients between the ages of 12 and 18 years than physicians in other departments (45.9%) [10].

The present study showed that significant differences on the need of dedicated adolescence care service among the different category of the population such as adolescent at home (p = 0.004), adolescents at work (p = 0.028), adolescence is defined (p = 0.022), adolescence age range (p = 0.001), need special training (p = 0.0001) and self-efficacy (p = 0.03). Previous study from Saudi Arabia reported that 84% of respondents agreed or strongly agreed that adolescents have specific health-care needs that differ from those of both children and adults. The study further reported that majority of respondents (85.8%) reported that adolescents should be hospitalized in a dedicated adolescent ward. Additionally, 76.7% of respondents reported that adolescents should have dedicated health-care services [10]. Relationship between opinion about provision of adolescent care services by primary care and characteristics and beliefs of the participants showed significant differences on study population such as job category (p = 0.037), adolescence is to be define by (p = 0.022), adolescence (p = 0.001), need special training (p = 0.001) and self-efficacy (p = 0.03). An earlier study reported that majority (85.8%) of the health care professionals believed that adolescents should be hospitalized in adolescent-specific wards. However, the adolescent health-care only began to emerge in recent years, yet widespread uptake has been very limited [10].

This study was mainly limited by the relatively small sample size and the study was done at only two centers in Riyadh region. Therefore, more research works, larger in scale, metacentric are required to overcome these limitations. In conclusion, the study revealed that a dearth of knowledge and understanding about adolescents health-care services among the health care professionals in Saudi Arabia.

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