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KNOWLEDGE, ATTITUDE, AND PERCEIVED PRACTICE OF PRIMARY CARE PHYSICIANS TOWARD SCREENING OF RISKY BEHAVIOURS IN ADOLESCENTS

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ABSTRACT

Background: The present study assessed the knowledge, attitude, and practice of primary care physicians for screening adolescents for risky behaviours.

Method: This cross-sectional study was conducted on primary care physicians. All physicians working in the primary health care centers in the Ministry of Health in the eastern province of Saudi Arabia were included in the study.

Result: A total of 185 physicians participated, and 78.4% stated that they had no training in adolescent health care. The majority of the physicians had correct knowledge regarding promoting smoking cessation (93.5%), screening for obesity (90.3%), and identification of the correct age range of adolescents (87.6%). However, only 20% of the sample had correct knowledge concerning screening of HIV for all adolescents, despite that almost all participants stated that they are comfortable with most adolescents' issues. Most physicians stated that they never counseled adolescents in the areas of alcohol and drug use, physical and sexual abuse, or sexually transmitted diseases.

Conclusion: This study identified a gap in the knowledge of physicians, which was reflected in their practice; however, the positive attitude expressed by most physicians provides an opportunity to improve adolescent health care in the region.

KEYWORDS

Primary health care physicians, Kingdom of Saudi Arabia, Adolescent health

Introduction:

Adolescents are defined as young people between the age of 10 and 19 years [1]. During this period dramatic physical, cognitive, and emotional transformation takes place.[2] Many potentially harmful lifestyle habits and behaviours are initiated during adolescence, indicating this period as an ideal time for primary prevention [3]. According to the World Health Organization (WHO), the most common health problems affecting adolescents include mental health problems, substance use, violence, unintentional injuries, and nutritional and sexual issues. Significant causes of morbidity and mortality among adolescents are often preventable.[1]To improve health outcomes for adolescents, it is essential for healthcare authorities to provide them with the appropriate preventive services and proper healthcare. Harrison, Pierre, Gordon-Strachan, Campbell-Forrester, and Leslie (2011) carried out a study in Jamaica on 916 physicians, involving general practitioners, family physicians, and pediatricians, which found that physicians more often screen for biomedical risks than psychosocial issues. Time limitations and insufficient knowledge were the main factors influencing their screening practices [4].

In Taiwan, Tsai, Chou, and Lin (2011) examined the experience and training needs in adolescent medicine in 226 pediatricians and found suboptimal experience and competence in managing many adolescent health issues [5].

In Makhlouf Obermeyer's systematic review conducted of adolescent health in the Arab world in 2015, it was found that the burden of ill health among adolescents in the Arab countries is related to preventable factors that are associated with unhealthy behaviours [6].

Al Makadma (2017) has conducted a systematic review in the Arab gulf regarding the state of adolescent health care in the region compared to the recommended guidelines for such services, which revealed limited monitoring of the health status of adolescents, leading to almost no evidence regarding the prevalence of mental health or reproductive health problems among Arab gulf adolescents. They recommended improving the adolescent health care system by planning comprehensive adolescent policies and programs, to improve primary health care systems and hospital care [7].

Approximately 20% of the Saudi population are adolescents.[8] However until recently, there has been little focus on adolescent health care [7]. Few studies in the kingdom have examined the knowledge and practices of physicians regarding preventive health services to adolescents, as most researchers have focused on the prevalence of risky behaviour among adolescents. Specifically, only one study has been conducted on physicians of the National Guard Hospitals, which serve a limited population, and found that while health care workers are interested in working with adolescents, they lacked the training and knowledge of health needs of adolescents [9]. To expand this field of research, the current study explored the knowledge, attitude, and practices of primary care physicians towards screening of adolescents for risky behaviours.

Methods

Study Setting Population and Time

This cross-sectional study was implemented on primary health care physicians working in primary health care centers in the cities of Dammam and Al-Khobar between April and June 2018. We recruited 255 physicians working in primary health care centres in the Ministry of Health in the Eastern province, with a final response rate of 73% (185 physicians).

Measures

Participants completed a self-report questionnaire constructed by the researcher by reviewing the relevant recent literature and referring to the guidelines, and with reference to existing questionnaires in other studies. The questionnaire included demographic variables, including age, gender, nationality, marital status, number of children, presence of adolescents at home, sector, last medical degree, rank, years of experience, accreditation of the primary care centre, average number of patients seen daily, average number of adolescents seen daily, training in adolescent health). Knowledge of physicians regarding the

screening of risky behaviours in adolescents included 17 items constructed by the researcher with reference to existing guidelines [10]. We scored physician's knowledge by assigning 1-point to every correct response, and 0- to incorrect. Total knowledge was then classified to quartiles as follows: <25%= *Poor*; 25-50% = *Fair;* 50-75%= *Good, and* >75%= *Excellent*. Attitudes of physicians regarding adolescent screening for risky behaviours was modified from the scale used in another study. It included nine questions measuring the comfort level of physicians in dealing with adolescent patients using a 5-point Likert scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree* [11]. The perception of practices of physicians regarding screening of risky behaviours in adolescents was modified from a scale used in another study and included nine questions using a 4-point scale ranging from 1 = never to 5 = *always* [11]. Barriers to implement practice was assessed with five items (time, parent limiting discussion with adolescent, lack of national guidelines, insufficient knowledge, and insignificance of screening) and was modified from an instrument used in another study[4].

The questionnaire was validated by experts in the field and was piloted with 30 physicians. The reliability of the questionnaire was determined by Cronbach's alpha, which was 0.86.

Data Analysis and Management Plan:
The data were analysed using the statistical package for social sciences software (SPSS) 22nd version. We used measures of central tendency to assess descriptive statistics. The chi-squared test compared two or more categorical variables, Student's t-test for comparing two continuous variables, and analysis of variance compared more than two continuous variables. Pearson correlation and linear regression were used. A p-value of less than 0.05 was considered significant.

Results
In this study the highest percentage of the sample was Saudi, female, married, working in Dammam sector and had no adolescents at home. The mean age of the sample was 34.6, while the mean years of experience was 7.9. Most of the participating physicians reported seeing more than 30 patients daily and more than 10 adolescents daily (63.3% and 41.6% respectively; Table 1). Most of the sample (80%) was Bachelor of medicine and Bachelor of surgery certified, 11.4% had a family medicine diploma/master's degree, and only 8.6% were family medicine board certified. Of the physicians, 84.3% were general practitioners, 13% were specialists, and 2.7% were consultants. Only 23.8% of the centres were accredited (CBAHI), and about 78.4% of the physicians stated that they did not receive any training in adolescent health care.

Knowledge Results
Figure 1 displays the total knowledge of physicians; 34.6% of participant physicians had poor knowledge while 15.7% had excellent knowledge of adolescent health care topics.
Our findings also revealed that the majority of the participating physicians had correct knowledge regarding the promotion of smoking cessation in adolescent smokers (93.5%), screening for obesity (90.3%), and identification of the correct age of the adolescent (87.6%). However, only 20% of the sample had correct knowledge concerning screening of HIV in adolescents (Table 2).

Attitude Results
The highest percentage of the participant physicians agreed and strongly agreed regarding all the questions of screening of risky behaviour in adolescents. The total mean score of attitude was 4.1 (Table 3).

Perception of Practice and Barriers
Most of the participating physicians endorsed always ensuring confidentiality with adolescents and counseling adolescents about physical activity, weight loss and smoking cessation. However, the majority of physicians endorsed never counselling adolescents about alcohol use, drug use, physical and sexual abuse, and sexually transmitted diseases (Table 4). Among the reported barriers, 77.3% of the participants stated that time limitations interfere with the ability of physicians to practice screening, followed by lack of national guidelines (60.5%; Figure 2).

Association of Socio-demographic Data with Knowledge, Attitude, and Practice
The mean score of knowledge of participating physicians was significantly higher among women, non-Saudi, married participants compared to single and divorced participants ($p<0.05$). Participant physicians with Family Medicine board certification had significantly higher mean knowledge compared to MBBS (Bachelor of Medicine, Bachelor of Surgery). Specialists had significantly higher mean knowledge compared to general practitioners. Mean knowledge was significantly lower among physicians seeing more than 10 adolescents daily compared to those seeing 5-10 and less than 5 adolescents ($p<0.05$), and the mean attitude score of participant physicians was significantly higher among those aged more than 34.6 years, men, and non-Saudi participants ($p<0.05$). The mean score of perception of practice was significantly higher among physicians older than 34.6 years, non-Saudi, married participants compared to single participants and those in Dammam sector ($p<0.05$). Participant physicians with more than 7.9 years of experience, working in accredited primary care centres, and those with previous training in adolescent health had significantly higher practice scores ($p<0.05$),(Table5).

Table1: Socio-demographic characteristics of the participating primary care physicians working in Dammam and Al-Khobar, 2018

Participant characteristics	Frequency (N=185)	Percentage (%)
Age in years: ≤ 34.6 y > 34.6 y	120 65	64.9 35.1
mean ± SD Range	34.6 ± 7.4 25-60 years	
Gender: Male Female	61 124	33.0 67.0
Nationality: Saudi Non-Saudi	150 35	81.1 18.9
Marital status: Single Married Divorced	34 145 6	18.4 78.4 3.2
Presence of adolescent at home Yes No	65 120	35.1 64.9
Sector Dammam Al-Khobar	131 54	70.8 29.2
Last medical degree MBBS Family Medicine Diploma/Master Family Medicine Board	148 21 16	80.0 11.4 8.6
Rank General practitioner Specialist Consultant	156 24 5	84.3 13.0 2.7
Years of experience y 7.9≤ > 7.9 y	118 67	63.8 36.2
Mean ± SD Range	7.9 ± 6.6 1-30 years	
Accreditation of the PHC Yes No	44 141	23.8 76.2
Average number of patients seen daily Less than 15 15 to 30 More than 30	18 50 117	9.7 27.0 63.3
Average number of adolescents seen daily Less than 5 5 to 10 More than 10	43 65 77	23.2 35.1 41.6
Training in adolescent health Yes No	40 145	21.6 78.4

Table 2 Knowledge of primary care physicians regarding screening for risky behaviour.

Knowledge questions	Correct N (%)	Incorrect N (%)	I don't know N (%)
1- Adolescents are between the ages of 10 and 19 years	162 (87.6)	15 (8.1)	8 (4.3)
2- The right to interview the adolescent without the presence of the parents	94 (50.8)	75 (40.5)	16 (8.6)

3- Confidentiality can be broken between the physician and the adolescent if there is risk of harm	127 (68.6)	24 (13.0)	34 (18.4)
4-Major causes of death in adolescents are preventable	131 (70.8)	15 (8.1)	39 (21.1)
5- Measurement of adolescent BMI is recommended to screen for obesity	167 (90.3)	8 (4.3)	10 (5.4)
6- Recommend exercise daily for all adolescents	147 (79.5)	29 (15.7)	9 (4.9)
7-It is highly recommended to screen all adolescents for dyslipidaemia	124 (67.0)	36 (19.5)	25 (13.5)
8- Screening for depression in adolescents starts at the age of 17 if follow up and treatment are available	66 (35.7)	73 (39.5)	46 (24.9)
9- It is recommended to screen all adolescents for suicide risk	89 (48.1)	54 (29.2)	42 (22.7)
10-Sexually active females should be screened for gonorrhoea	101 (54.6)	44 (23.8)	40 (21.6)
11- Sexually active females should be screened for chlamydia	99 (53.5)	38 (20.5)	48 (25.9)
12- Screening for HIV is recommended for all adolescents	37 (20.0)	116 (62.7)	32 (17.3)
13- Screening for smoking is recommended for all adolescents	136 (73.5)	30 (16.2)	19 (10.3)
14- It is recommended to promote smoking cessation in adolescents who are smokers	173 (93.5)	6 (3.2)	6 (3.2)
15- It is recommended to council adolescents about alcohol abuse	136 (73.5)	26 (14.1)	23 (12.4)
16- It is recommended to screen all adolescents for eating disorders (anorexia nervosa & bulimia)	114 (61.6)	46 (24.9)	25 (13.5)
17- It is recommended to council adolescents with eating disorders	147 (79.5)	18 (9.7)	20 (10.8)

Table 3 Attitude of primary care physicians regarding screening of risky behaviours in adolescents

Attitude questions	Strongly disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly agree N (%)
1- Comfort providing health care to adolescents	1 (0.5)	6 (3.2)	35 (18.9)	66 (35.7)	76 (41.1)
2- Comfort discussing physical activity with the adolescent	2 (1.1)	0	8 (4.3)	51 (27.6)	124 (67.0)
3- Comfort discussing eating habits with the adolescent	2 (1.1)	0	18 (9.7)	57 (30.8)	108 (58.4)
4- Comfort discussing smoking with the adolescent	2 (1.1)	5 (2.7)	16 (8.6)	49 (26.5)	113 (61.1)
5- Comfort discussing alcohol use with the adolescent	6 (3.2)	12 (6.5)	33 (17.8)	51 (27.6)	83 (44.9)
6- Comfort discussing drug abuse with the adolescent	5 (2.7)	11 (5.9)	40 (21.6)	51 (27.6)	78 (42.2)
7- Comfort discussing depression and suicide with the adolescent	3 (1.6)	15 (8.1)	27 (14.6)	60 (32.4)	80 (43.2)
8- Comfort discussing physical and sexual abuse with adolescent	6 (3.2)	22 (11.9)	48 (25.9)	51 (27.6)	58 (31.4)
9- Comfort discussing sexually transmitted diseases with the adolescent	7 (3.8)	25 (13.5)	44 (23.8)	49 (26.5)	60 (32.4)
Total mean score of attitude	4.1 ± 0.7				

Table 4 Perception of practice of primary care physicians regarding screening for risky behaviours in adolescents

Perception of practice questions	**Never N (%)**	**Sometimes N (%)**	**Most of time N (%)**	**Always N (%)**
1-Ensure confidentiality with adolescent.	1 (0.5)	17 (9.2)	58 (31.4)	**109 (58.9)**
2-Counseled an adolescent about physical activity and weight loss.	1 (0.5)	27 (14.6)	60 (32.4)	**97 (52.4)**
3-Counseled an adolescent about an eating disorder.	34 (18.4)	43 (23.2)	37 (20.0)	**71 (38.3)**
4- Counselled an adolescent about smoking cessation.	31 (16.8)	46 (24.9)	34 (18.4)	**74 (40.0)**
5- Counselled an adolescent about alcohol use.	**92 (49.7)**	35 (18.9)	13 (7.0)	45 (24.3)
6- Counselled an adolescent about drug use.	**84 (45.4)**	34 (18.4)	19 (10.3)	48 (25.9)
7 Counselled an adolescent about depression and suicidal ideation.	55 (29.7)	55 (29.7)	28 (15.1)	47 (25.4)
8- Counselled an adolescent about physical and sexual abuse.	**87 (47.0)**	42 (22.7)	21 (11.4)	35 (18.9)
9- Counselled an adolescent about sexually transmitted diseases.	**85 (45.9)**	45 (24.3)	21 (11.4)	34 (18.4)
Total mean of practice	2.6 ± 0.8			

Table 5 Association between demographic variables and knowledge, attitude, and practice of physicians

	Knowledge	Attitude	Practice			
Sociodemographics	Mean ± SD	P value	Mean ± SD	P value	Mean ± SD	P value
Age: ≤ 34.6 y > 34.6 y	11.5 ± 3.1 11.5 ± 2.8	0.920	4.1±0.7 4.3±0.7	0.049*	2.5±0.8 2.7±0.8	0.43*
Gender: Male Female	10.8 ± 3.1 11.8 ± 2.9	0.029*	4.3±0.6 4±0.7	0.019*	2.6±0.7 2.5±0.9	0.356
Nationality: Saudi Non-Saudi	11.3 ± 3.1 12.6 ± 2.5	0.020*	4.1±0.7 4.4±0.7	0.026*	2.5±0.8 2.9±0.9	0.007*
Marital status: Single Married Divorced	9.9 ±3.2 12 ±2.8 a 9 ±3.7	0.000*	4±0.7 4.2±0.7 3.8±1.0	0.216	2.2±0.8 e 2.7±0.8 e 2.3±0.9	0.01*
Presence of adolescent at home Yes No	11.3 ± 2.8 11.6 ± 3.1	0.574	4.2±0.7 4.1±0.7	0.088	2.7±0.9 2.5±0.8	0.057

Sector Dammam Al-Khobar	11.8 ± 2.6 10.9 ± 3.7	0.056	4.1±0.8 4.3±0.6	0.073	2.7±0.8 2.3±0.8	0.012*
Last medical degree MBBS Family Medicine Diploma/Master Family Medicine Board	11.2 ± 3.1 b 12.2 ± 2.8 13.8 ± 1.2 b	0.002*	4.1±0.7 4.3±0.7 4.4±0.6	0.076	2.5±0.8 2.7±0.9 2.9±1.0	0.187
Rank General practitioner Specialist Consultant	11.2 ± 3.1 c 12.8 ± 2.5 c 13.6 ± 1.1	0.015*	4.1±0.7 4.3±0.7 4.4±0.7	0.166	2.5±0.8 2.8±0.9 2.9±1.2	0.251
Years of experience ≤ 7.9 y > 7.9 y	11.5 ± 3.1 11.6 ± 2.8	0.802	4.1±0.7 4.2±0.7	0.12	2.5±0.8 2.7±0.8	0.031*
Accreditation of the PHC Yes No	11 ± 3.1 11.7 ± 3.0	0.2	4.3±0.6 4.1±0.7	0.106	2.9±0.8 2.5±0.8	0.002*
Average number of patients seen daily Less than 15 15 to 30 More than 30	12.9 ± 3.3 11.6 ± 2.9 11.3 ± 3.0	0.1	3.8±0.6 4.2±0.6 4.2±0.7	0.155	2.5±1.0 2.7±0.8 2.5±0.8	0.292
Average number of adolescents seen daily Less than 5 5 to 10 More than 10	11.7 ± 2.8 11.8 ± 2.7 10.5 ± 3.1 d	0.000*	4.1±0.7 4±0.7 4.2±0.7	0.424	2.6±1.0 2.6±0.8 2.5±0.8	0.759
Attending training program in adolescent health Yes No	12 ± 3.2 11.4 ± 2.9	0.269	4.1±0.7 4.1±0.7	0.538	2.8±0.9 2.5±0.8	0.028

Statistical significant (p<0.05).
[a]Married was significant compared to single and divorced
[b]Board was significant compared to MBBS
[c]Specialist was significant compared to GB
[d]seeing more than 10 was significant lower compared to other group

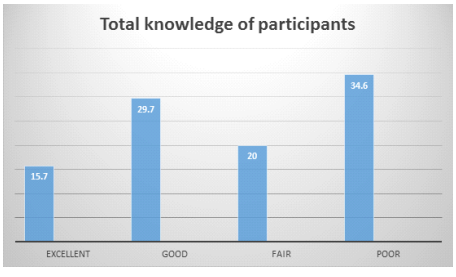

Figure1. Knowledge of the participants regarding screening for risky behaviours in adolescents

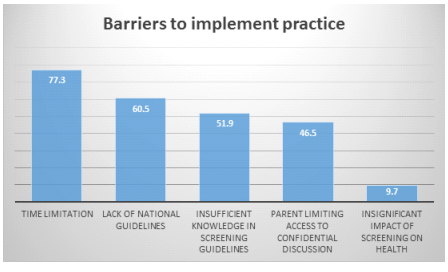

Figure 2. Barriers to implementing practice regarding screening for risky behaviours in adolescents

Discussion

This study was designed to assess the knowledge, attitude, and practice of primary care physicians regarding screening of risky behaviours in adolescents in Dammam and Al-Khobar cities.

Knowledge

Consistent with previous research, we found that a low percentage of the participant physicians had excellent knowledge, while a higher percentage had poor knowledge, of adolescent health care topics[12]. Most participating physicians had correct knowledge regarding identification of the correct age of adolescents, similar to the result of correct identification of adolescent age found in a previous study in Bahrain. This is possibly because most health authorities had a defined age range for adolescents. Further, most physicians had correct knowledge regarding the promotion of smoking cessation and screening of obesity, which could be due to the availability of national programs promoting smoking cessation and obesity screening. Few of physicians had correct knowledge concerning HIV screening, consistent with the results of a US study on paediatricians.[13]This finding could be due to sociocultural factors. Women had better knowledge than men, and the knowledge was greater in non-Saudi physicians than Saudis, which could be due to the lack of national guidelines. Family medicine specialists were found to have significantly higher knowledge than general practitioners, who represent the majority of physicians (84%), possibly because adolescent health is part of the family medicine curriculum.

Regression analyses demonstrated that the knowledge of participants was affected by the physician's marital status and number of adolescent patients seen daily with married physicians had better knowledge than single physicians, possibly because married physicians have greater psychosocial stability. Physicians who saw more than ten adolescents daily had a lower level of knowledge than those seeing fewer adolescents, possibly because with a high number of patients, physicians did not have sufficient time to improve their knowledge.

Attitude

Most of the participating physicians had a positive attitude towards screening for risky behaviours in adolescents, which is similar to the findings of a study conducted in the kingdom that reported that the majority of hospital physicians were interested in working with adolescents and gaining further skills and knowledge in adolescent health care [9]. This positive attitude demonstrates the potential for

improve adolescent health care in the region.

Perception of Practice

We identified a deficit in the perception of the practice regarding the screening of risky behaviours in adolescents, which replicated the findings of Taiwanese paediatricians that reported suboptimal experience and competencies in managing adolescent health issue.[5]This could be explained by inadequate knowledge of the physicians which was significantly correlated with their practice. The inadequate knowledge could be attributed to a lack of national guidelines, as reported by most of the participating physicians. Attending a training program in adolescent health significantly affects the practice of the participants. Moreover, physicians working in accredited centres were noted to have a better practice than those working in non-accredited centres, which may imply that accredited centres have special requirements for preventive services.

The present study demonstrated that most physicians reported always ensuring confidentiality with the adolescent and counselling an adolescent about physical activity, weight loss, eating disorders, and smoking; however, most reported never counselling adolescents regarding alcohol and drug abuse, physical and sexual abuse, or sexually transmitted diseases. This was similar to a study conducted in Jamaica which found that physicians often screen for biomedical risks rather than psychosocial risks.[4] This appears to be due to cultural sensitivity in talking to the adolescent in these topics, as a parent limiting access to confidential discussions with their adolescent seemed to be a barrier to the participating physicians to implement the practice. This may account for the deficit in their practice.

The age and experience of physicians positively influenced their perception of practice, which is possibly because increased age leads to increased experience and more exposure to adolescent patients.

Limitations:

The current study was limited to two geographical areas, and examined only primary care physicians.

Conclusions:

The present study suggests unsatisfactory knowledge among primary care physicians, and this was reflected in their screening practices, particularly for psychosocial risks. Positive attitude demonstrated by physicians will potentially improve adolescent health care in the region.

Based on our findings, we suggest providing educational programs for all physicians involved in adolescent health care, designing national guidelines that are culturally competent to Saudi society, and including adolescent health in the academic curriculum of undergraduate studies.

Disclosure:

The authors report no conflict of interests

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