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ORIGINAL ARTICLES

Factors associated with self-medication among expatriate high school students: a cross-sectional survey in United Arab Emirates

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ABSTRACT

The study aimed to assess factors associated with self-medication (SM) among expatriate high school students of United Arab Emirates using a validated questionnaire. Most common reasons for self-medication in 324 participating students were: presence of mild illness and previous experiences. High risk practices like altering the dose, discontinuation of medication and self-medication without adult guidance were observed. The likelihood of SM was 4.9 times (95%C.I.: 2.0-12.2) in students not utilizing private healthcare services than those who were utilizing these services. Increased efforts are needed to prevent the risks of self-medication in adolescents through healthcare education for both parents and adolescents.

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INTRODUCTION

Adolescence is a key period in life with regard to emergence of health practices which may persist through adulthood. A potential hazardous health practice among adolescents is self-medication (SM). SM is defined as the use of over-the-counter/prescription drugs for self-treatment without a physician's consultation [1-3] and represents the concept of self-care in health [3, 4]. Females and older adolescents are reported to be more predisposed to self-medicating irrationally [5-9]. Medicine use is also being regarded as part of a cluster of risk behaviors among adolescents, similar to cigarette and alcohol use [10]. Consequently, SM is a pertinent area for both public health research and health educational policies.

The United Arab Emirates (UAE), a Middle Eastern country, has a special demographic situation with expatriates outnumbering the local Emirati population [11]. The expatriates may have different SM practices from the Emirati population (with free access to public healthcare services). Moreover, easy accessibility to prescription drugs in many developing countries [12] may also influence the expatriate population, which has a strong representation from these countries.

In spite of public and professional concern about the irrational and widespread use of drugs among adolescents, very little data is available on SM practices in expatriate adolescent population and the only study reported from Middle Eastern region involved Kuwaiti adolescents [7]. There is no published information, to our knowledge, on SM practices in adolescent school students of UAE. Hence, it was thought pertinent to assess the factors and perceived reasons for SM among expatriate high school students in UAE and to investigate differences, if any, with regard to gender.

METHODS

A cross-sectional self-administered questionnaire-based survey was conducted in a convenience sample of expatriate high school students (grades 9 through 12) from four schools in UAE after obtaining approval from the Institutional Ethics Committee. A structured, content-validated and pre-tested questionnaire with closed ended statements, determined through focus group discussions and review of literature [5, 6, 8, 13-17], was used to collect the data. Besides the socio-demographic details of sample, the questionnaire ascertained (through a yes-or-no response) the prevalence of SM, access to healthcare services; habit of SM among other family members; presence of health practices like altering dosage of drug prescribed by physician and discontinuing medication against the doctor's advice and involvement of adults in SM practices. A list of options with possibility of multiple responses was included for determining the perceived reasons for SM.

Briefing about the study objectives and instructions for filling the questionnaire were given to the teachers, who then conveyed them to their students. Confidentiality of data was assured and informed consent was obtained. Data analysis was performed using PASW18 version. Categorical variables were described by frequencies and percentages. Pearson Chi-square test was used to identify association between dependent variable (SM) and independent variables (access to health care services; habit of SM among other family members; presence of high risk health practices). Variables found significantly associated with SM (p<0.05 in the bivariate analysis) were further included in a multiple logistic regression model; adjusted odds ratios (OR) and the respective confidence intervals were calculated.

RESULTS

The sample, comprising of 324 expatriate students of different ethnicity (Asians of Indian subcontinent 40%; Arabs 40%; others 20%), age range of 14-19 years, was almost equally distributed by gender (males 149; females 160; gender unreported 15). SM was prevalent among 289 students (89.9% females and 88.8% males) in the preceding one year.

Most of the respondents reported frequenting private clinics for common illnesses (53%) rather than government hospitals (7.7%); had convenient access to clinic/pharmacy (88.3%) and had health insurance coverage (67.3%).

Bivariate analysis revealed that SM was significantly more present in students not utilizing private healthcare services (crude OR=4.9; 95%C.I.: 2.0-12.2) and whose family members had the habit of SM (crude OR=2.4; 95%C.I.: 1.17-4.83). Utilization of public healthcare services, access to a clinic/pharmacy, health insurance coverage and high risk health practices were not significantly associated with SM (Table 1). No gender differences were observed with regard to these factors.

Multivariate analysis revealed that students not using public healthcare services (adjusted OR = 4.4; 95%CI: 1.7-11) showed an increased risk for SM. However, the association between SM and familial influence (adjusted OR=1.9; 95%CI: 0.9-3.9) was not maintained.

TABLE 1

FACTORS AND PRACTICES RELATED TO SELF-MEDICATION				
FACTORS		n=324	NUMBER OF STUDENTS WHO WERE SELF-MEDICATING (%)	NUMBER OF STUDENTS WHO WERE NOT SELF-MEDICATING (%)
A. HEALTHCARE SERVICES	Using Government hospital services	Yes (n=25)	21 (84)	4 (16)
		No (n=299)	268 (89.6)	31 (10.36)
	Using Private clinic Services	Yes (n=172)	143 (83.1) #	29 (16.9)
		No (n=152)	146 (96.1)#	6 (3.9)
	Convenient access to clinic/ pharmacy	Yes (n=286)	258 (90.2)	28 (9.8)
		No (n=38)	31 (81.6)	7 (18.4)
	Health insurance coverage	Yes (n=218)	197 (90.4)	21 (9.6)
		No (n=106)	92 (86.8)	14 (13.2)
B. PRACTICE OF SELF-MEDICATION AMONG OTHER FAMILY MEMBERS		Yes (n=200)	185 (92.5)*	15 (7.5)
		No (n=124)	104 (83.9)*	20 (16.1)
C. HIGH RISK HEALTH PRACTICES	Altering dose of prescribed drug according to symptoms ■	Yes (n=137)	124 (90.5)	13 (9.5)
		No (n=138)	124 (89.9)	14 (10.1)
	Intentionally discontinuing medication against doctor's advice on feeling better ▲	Yes (n=156)	143 (91.7)	13 (8.3)
		No (n=144)	125 (86.8)	19 (13.2)

\#: p<0.001

*: p<0.05

■ : 49 students did not provide the information

▲ : 24 students did not provide the information

Among the students who were self-medicating (n=289), 64% had family members who were also self-prescribing. Self-medicating female students (72%) had significantly more (p<0.01) family members self-prescribing than the self-medicating male students (55%). Almost half of the students who were self-medicating reported altering dose of the drug (43%) and discontinuing the medication (49.5 %).

The reasons most commonly cited for SM were: presence of mild illness/ problem too trivial to consult the physician and previous experience with the drug. Male students reported lack of time (for consulting a physician) significantly more than females (p<0.001). Majority of self-medicating students (77.2%) revealed that they had taken at least one drug with adult guidance in the past 2 weeks while 25% had taken at least one drug independently. No significant gender differences were observed in either of these practices (Table 2).

DISCUSSION

Self-medication is practiced globally by adolescents [5-10, 13, 14, 16-20] and prescription drug abuse is emerging as an alarming trend [21].This is the first study, to our knowledge, identifying the factors associated with SM in expatriate high school students in the UAE. Since the expatriate community forms about 83% of the total population of UAE, monitoring the SM practices in this specific population may promote safe medication use [15] and our findings may have implications on the public health policies of UAE.

Students not accessing private healthcare services were self-medicating more often than those who frequented private clinics. In contrast, an association between SM and increased use of public healthcare services has been reported in another study [18]. Difficulties in access and dissatisfaction with public healthcare services have been reported as determinants for SM [22]. As none of these studies involved expatriate population, further

TABLE 2

REASONS CITED AND ADULT INVOLVEMENT ASSOCIATED WITH SELF-MEDICATION				
	CHARACTERISTICS	TOTAL NUMBER OF STUDENTS WHO WERE SELF-MEDICATING (%) (n=289)#	NUMBER OF MALE STUDENTS WHO WERE SELF-MEDICATING (%) (n=134)	NUMBER OF FEMALE STUDENTS WHO WERE SELF-MEDICATING (%) (n=142)
REASONS	Mild illness/ problem too trivial to consult the physician	94 (32.5)	40 (29.9)	50 (35.2)
	Previous experience with the drug	86 (29.8)	36 (26.9)	46 (32.4)
	Lack of time	71 (24.6)	46 (34.3)*	21 (14.8)*
	Convenience	27 (9.3)	11 (8.2)	16 (11.3)
	Non-availability of doctor	17 (5.9)	9 (6.7)	7 (4.9)
	Urgency of problem	14 (4.8)	4 (3)	10 (7)
	Cost of consultation	11 (3.8)	8 (6)	3 (2.1)
	Advice from friend (who is not a doctor)	6 (2.1)	3 (2.2)	3 (2.1)
INVOLVEMENT OF ADULTS	At least one medicine self-medicated *with* adult guidance in the past 2 weeks	223 (77.2)	99 (73.9)	114 (80.3)
	At least one medicine self-medicated *without* adult guidance in the past 2 weeks	72 (24.9)	36 (28.1)	31 (23.3)

*: p<0.001

#: 13 students did not report their gender

research is necessary to evaluate whether our results reflects differences in the quality of care experienced by our respondents.

The role of insurance coverage [12] and influence of family members with a habit of SM [19] has been well documented. In our study, familial influence was observed to be more among the self-medicating female students than the males, probably because mothers are role-models for their daughters. One-fourth of our self- medicating students were using drugs without adult guidance, which is comparable to that reported in Maltese (35%), Indian (26%) and American (14%) students [16, 20, 23].

A very high prevalence of high risk health practices like altering the dosage of the drug (43%) and stopping the medication against the doctor's advice (50%) was reported, which has great implication for the development of antibiotic resistance. Similar results were also observed in American adolescents overmedicating with analgesics [23]. These high risk practices along with the independent drug use can be considered an assertion of the autonomous health behavior among expatriate adolescents of UAE.

SM usually involves the use of medicines to treat self-recognized symptoms and is commonly practiced for conditions which are troublesome but not justifying a physician's consultation [2]. While we could not find any studies elaborating the reasons for SM in adolescents, the presence of a trivial problem and previous experiences with drugs reported by our respondents have also been reported by adults [24, 25].

It is the responsibility of the society to empower adolescents with the correct knowledge of use of drugs to prevent adverse drug effects. Parents can guide by educating adolescents and also by modeling "responsible"

SM practices [3]. School programs in the appropriate use of drugs can start at an early age [26]. However, current health education in schools focuses mostly on preventing poisoning, avoiding substance abuse, disease prevention, health promotion. Adolescents can also be encouraged to read medication instructions or patient package inserts of the commonly used drugs. Students have also suggested including drug education topics in school [6, 26].

Our questionnaire-based survey has its limitations. Hence, we recommend further qualitative studies to probe specific aspects. The absence of randomization in our sampling procedure, potential selection bias and a small sample size make it difficult to generalize results. Nevertheless, given the paucity of previous research, this study contributes to the knowledge of factors influencing medicine use and evidence of autonomous health behavior in the expatriate adolescent population of UAE.

CONCLUSIONS

Our findings indicate that SM is associated with non-utilization of private healthcare services in expatriate adolescents of UAE. Additionally, familial influence was observed more among the self-medicating female students than the males. In view of the high risk practices encountered and reasons cited for SM, these adolescents are at a risk of adverse drug effects due to irrational use of drugs. Increased efforts are needed to prevent the risks of self-medication in adolescents through healthcare education for both parents and adolescents.

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