



Original article

Analgesics Misuse: a Problem among Saudi Female Students

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ABSTRACT

Background: The research aimsto assess the knowledge and attitude of female high school students towards analgesics use. The research is a result of concerns raised by high school advisors in regards to the analgesics knowledge and frequency of use amongst students. The findings of the study could be useful for targeted awareness campaigns or sessions for students and the community. **Methods and Material:** A questionnaire was developed by the investigator and validated by two experts. All students in the third grade were included in the study. The total number of students was 488. All data were collected by the investigator through direct contact with the students. **Statistical Analysis Used:** Analysis of Variance, t-test, and univariate regression model were used as appropriate. **Results:** Reliability of the questionnaire was found to be 100%. The mean age of students was 17.4 ± 0.8 years. A total of (88.3%) of the students reported use of analgesics. Paracetamol was the drug of choice for almost half of the students (49.2%). The study showed repeated analgesics usage among the students, where (12%) used medication daily, (14.4%) weekly and (72.6%) had monthly usage. Only two variables affected the prevalence of analgesics usage namely “analgesics given to students by the people surrounding them” and “analgesics are the immediate choice when the students feel any pain”. **Conclusion:** Self-medication is prevalent and common among adolescent female students in Safwa city, Eastern Province Saudi Arabia. Moreover, the knowledge of analgesics side effects was inadequate which led to widespread misuse among the targeted population.

KEYWORDS:analgesics, female students, misuse.

INTRODUCTION

The term self-medication refers to patients who use non-prescription medicines, also called over-the-counter (OTC) drugs, to treat self-diagnosed sicknesses [1]. Little is known about what beliefs people possess regarding mild analgesics, and whether these beliefs are associated with the use of mild analgesics [2]. In addition, available surveys suggests that some people view OTC medication as “weak” and hence less risky than other forms of medication [2].

Previous epidemiological studies have revealed that self-medication among adolescents is common [1]. However, little has been reported on adolescents’ knowledge and usage of analgesic medications in any country [2]. Furthermore, there has been little involvement in terms of

activities and research related to medications usage and management in schools [2]. Up to the best of the author’s knowledge little research has been conducted about this subject in Kingdom of Saudi Arabia (KSA), Arabian gulf countries and other Arab countries in the region as compared with United States or European countries.

The aim of this study was to assess the knowledge and attitude of female high school students on analgesics use in Safwa city, Eastern province of Kingdom of Saudi Arabia (KSA). In addition another objective of the current study was to measure the prevalence of analgesics use among them and recognize the factors associated with its use.

MATERIALS AND METHODS

This study was conducted in female high schools in Safwa city. Safwa is a city in the Eastern Province of Saudi Arabia situated at the Arabian Gulf coast. It follows Qatif area and has a population of more than 100,000 people. Safwa is a small city compared to neighboring Al-Khobar city and has no private schools. Moreover, the economic status and the demographic of the population is reasonably different. Safwa city has 14 schools for females, two of which are high schools where this study was conducted during February to March 2013

A 2-pages Arabic\English questionnaire was developed by the investigator and was validated by two experts. The questionnaire had three main parts; the first part covered socio- demographic characteristics of the students. The second part: composed of questions to assess self-reported practices among students regarding their use of analgesics. The final part was composed of questions to assess students' attitude and knowledge towards analgesics. All Saudi and non-Saudi third high grade schools female students were included and there was no exclusion criteria.

All data were collected by the investigator through direct contact with the students. Instructions were provided, together with any clarifications required. Data were initially coded and entered to a PC using Microsoft excel program. All continuous data were presented in mean and standard deviation.

All data was analyzed using SPSS (version 16) in Bivariate and Multivariate analysis. Appropriate statistical tests were used and P-value less than 0.05 was considered significant.

Categorical data were presented in percentage. Difference between variables was tested by T-test for continuous variables and chi-square for categorical variables. Variables were coded as mentioned in the independent variables. Consequently, regression analysis of adjusted confounding variables was used to identify predictors.

Ethical approval for conducting the study was obtained from the department of family and community medicine at the University of Dammam, The Ministry of Education in the Eastern Province and The General Directorates of Female Education and school health services for female in Safwa, KSA. In addition, written permissions were obtained from the school administration and from each student.

RESULTS

The study sample included a total number of 488 female students. Giving a response rate of 100%. The socio-demographic characteristics of the female school students varied and the mean age of students was 17.4 ± 0.8 years (Table 1).

Table 1: socio- Demographic Characteristic of Female School Students

Items	n (%)
Age(Years)	17.4± 0.8
Nationality	
Saudi	471(98.5)
Non- Saudi	7(1.7)
Family Income	
<5000 Saudi Riyal	48(10.4)
5000-10000	120(25.7)
>10000 Saudi Riyal	115(25.0)
Unknown	184(39.7)
Father Education	
Illiterate	14(3.0)
Primary and intermediate school	179(38.1)
Secondary school	162(34.4)
College	116(24.7)
Mother Education	
Illiterate	43(9.0)
Primary and intermediate school	203(42.7)
Secondary school	160(33.7)
College	70(14.8)
Any Chronic Diseases	
Absent	402(83.8)
Present	75(15.6)

In this study Saudi and non-Saudi students' usage pattern of analgesics proved to be similar $p < 0.416$. Moreover, the study revealed that, there is an independency between using of analgesics and family income, father education, mother education and having chronic diseases.

The intensity of using analgesics among the study sample incorporated a number of different analgesics. A total of

(88.3%) of the students reported use of analgesics. Paracetamol was the drug of choice for almost half of the students (49.2%). However the remaining used ibuprofen (13.3%), voltaren (2.9%), buscopan (6.6%) and the remaining students used other types of analgesics (33.6%) (Table 2).

Table 2: Distribution of Intensity of Using Analgesics Among Female School Students

Analgesic Name	Not Used n (%)	Once n (%)	Twice n (%)	More Than Twice n (%)
Panadol	248 (50.8)	161 (33.0)	65 (13.3)	14 (2.9)
Ibuprofen	423 (86.7)	48 (9.8)	11 (2.3)	6 (1.2)
Voltaren	474 (97.1)	10 (2.0)	2 (0.4)	2 (0.4)
Buscopan	456 (93.4)	21 (4.3)	8 (1.6)	3 (0.1)

The study showed the analgesics usage recurrence in the students as follows: (12%) of the students used medication daily, (14.4%) weekly and (72.6%) had monthly usage.

Self-Reported Knowledge on Different Aspects of Analgesics Used by Female School Students was measured and considered in this study (Table 3).

Table 3: Self-Reported Knowledge on Different Aspects of Analgesics Used By Female School Students

Items	Not Used n (%)	Used n (%)	P-Value
Have Prescription From Doctor			
Yes	25(48.1)	320(75.3)	0.010
No	27(51.9)	105(24.7)	
Taking Analgesia			
Seldom or never	56(100)	4(1)	0.010
Daily	0(0)	49(12)	
Weekly	0(0)	59(14.4)	
Monthly	0(0)	297(72.6)	
Given Analgesia From By people around them			
Yes	17(32.7)	242(57.3)	0.001
No	35(67.3)	180(42.7)	
Offers Analgesia To People			
Yes	11(21.2)	130(30.8)	0.099
No	41(78.8)	292(69.2)	
Uses Without Doctor Prescription			
Yes	23(44.2)	284(67.1)	0.001
No	29(55.8)	139(32.9)	
Reads Instruction			
Yes	31(58.5)	187(43.6)	0.028
No	22(41.5)	242(56.4)	
Follows Instruction			
Yes	31(57.4)	191(44.6)	0.052
No	23(42.6)	237(55.4)	
Immediate Choice When Having Pain			
Yes	18(34.6)	256(60.4)	0.002
No	34(65.4)	167(39.4)	
Consumes More During menstrual cycle			
Yes	10(18.5)	228(53.1)	0.010
No	44(81.5)	201(46.9)	
Improper Or Large Consumption Of Analgesia			
Risk To Health	48(90.6)	343(81.3)	0.063
Does Not Affect Health	5(9.4)	79(18.7)	

Logistic regression analysis was used to identify the factors associated with the use of analgesics among female students while controlling other variables. Table 4 shows that (12.6%) of analgesics usage could be interpreted by two of

the factors studied. These two factors were; students are given drugs by people surrounding them ($P < 0.026$) and students think of analgesics as the immediate choice when they feel any pain.

Table 4: Logistic Regression Analysis Showing Factors Associated with Use of Analgesics among Female Student

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Age	0.633	0.346	3.347	1	0.067	1.884	0.956	3.713
Drug Usage without prescription	-0.463	0.389	1.419	1	0.234	0.629	0.294	1.349
Given drugs from people	-0.885	0.397	4.962	1	0.026	0.413	0.189	0.899
Read instructions	0.212	0.339	0.391	1	0.532	1.236	0.636	2.401
Analgesics are the immediate choice	-0.791	0.356	4.922	1	0.027	0.453	0.226	0.912
Knowledge about improper use consequences	0.166	0.518	0.102	1	0.749	1.18	0.427	3.260
Offers drugs to others	0.117	0.398	0.086	1	0.769	1.124	0.515	2.453
Constant	-6.239	5.975	1.090	1	0.296	0.002		
$p < 0.001$, and $R^2 = 12.6\%$								

DISCUSSION

In Saudi Arabia an earlier study was conducted to evaluate knowledge and attitude of female students on medications in Al-Khobar city, Eastern province of the Kingdom of Saudi Arabia (KSA). The study concluded that there is an immediate need to better understand, and improve the knowledge about medications usage in the schools [3]. Another Study was carried in Arabian Gulf University, Manama, Kingdom of Bahrain in 2006 about Evaluation of the knowledge, attitude and practice of self-medication among first-year medical students. It was found that self-medication was practiced by 44.8% of the subjects. Analgesics were the most common drugs used for self-medication and Knowledge about appropriate self-medication was poor. However, attitude towards self-medication was positive, and the practice of self-medication was common and often inappropriate [9], [11], [12], [13], [20], [22], [23], [24].

This study surveyed 488 third grade high school female students in Safwa city, Eastern province, Saudi Arabia with a response rate of 100%. The mean age for the students participating in the study was 17.4 ± 0.8 . Age was not found to be a significant factor in manipulating the prevalence of analgesics usage patterns among students. In variance with our finding other studies found age to be an important factor. However, these studies included samples with wider age range. Their findings suggested correlation between increase of age among adolescents and an increase in analgesics usage [3], [5], [6], [7], [8], [20], [21], [23].

The results of this study revealed that the family income of the participants was not significantly associated with the usage of analgesics among the students. Likewise, parent's education did not significantly influence the prevalence of analgesics usage. This finding was similar to the findings of another study conducted in Saudi Arabia in 2007 [3] This could suggest a mismatch between educational level and health awareness among the parents; as found also in another study which established that health literacy is an

independent factor for the unsafe consumption of medicines [8].

A recent study surveyed college students' knowledge, attitude, and practice of self-medication in Nepal. The researcher found a relationship between fathers' profession and education and the prevalence of self-medication among the students. The results showed that self-medication is less frequent among students with educated parents. The researcher questioned the effect of the society on the findings [24].

It was unanticipated to find that the presence of chronic illnesses did not impact or influence the prevalence of using analgesics medications among the surveyed students in this study. Furthermore, up to the researcher knowledge, no recent studies were conducted to study the relation between the presence of chronic illnesses and the usage tendencies of analgesics. On the contrary studies revealed that students with non-serious health problems or minor illnesses tend to use analgesics to rapidly ease their symptoms [10], [11], [20], [21], [22], [23].

This study showed that female high school students are very familiar and accustomed to the usage of analgesics, as (88.3%) used them frequently. Moreover, the prevalence in this study (88.3%) is in line with other similar studies targeting similar populations, (91%) (59%) (85%) (80%) (87%) (71.5%), respectively [9], [11], [12], [13], [20], [24]. The results of this study confirmed the predominance of analgesics drugs misuse among the targeted population, where (12%) used medication daily, (14.4%) weekly and (72.6%) had monthly usage. Moreover the study showed that the frequency of consuming analgesics increases during menstruation period as reported by (53.1%) of the students, supporting other research findings [3], [21].

Paracetamol was identified as the most common analgesic used by the students, as (49.2%) reported its usage supporting other study findings [21]. Furthermore, many

researchers documented self-poisoning cases among adolescents due to paracetamol misuse [14], [15]. Nonetheless, (33.6%) of the students reported the usage of 'other' analgesics. Several unidentified factors are to be considered about these unknown medications such as the risk of abuse, the main component of the drug and whether they are opioid or non-opioid drugs.

As reported in several studies [3], [4], [6], [10], [11], [12], [13], [16], [17], [18], [21], [22], (67.1%) of the students surveyed used analgesics medications without a doctor prescription. The broad availability of this type of medication especially in the students' household and the fact that no prescription is needed to purchase the medication could be reasons for this high usage rate.

Reading the safety instructions provided by the drug manufacturer on the proper usage and dosage was not a habit of many of the students. A high rate of (56.4%) reported that they commonly do not read the instructions written in the medicine sheet. In addition, (55.4%) reported that they do not follow the instructions written in the medicine precisely most of the time. These findings are in line with other similar studies [4], [7], [9], [11], [16], [18]. Lack of information about analgesics side effects was significant in previous studies [3], [4], [5], [7], [17]. While in this study, (81.3%) of students stated that they agree that improper or large consumption of analgesic medications is dangerous. On the other hand, (18.7%) of them believed that improper or large consumption of analgesic medications does not affect health. This finding is consistent with the findings of another recent study conducted in the kingdom [13].

The result of this study revealed that two of the factors considered are the most significant in increasing the analgesics prevalence among the surveyed students as shown in table 4. More than half (57.3%) of the students participating in this study were found to be given analgesics medications by people surrounding them. This result is supporting earlier studies findings [3], [7], [12], [18], [19], [21], [22], [23]. Adolescents tend to resort to parents, siblings and friends to get advice about medications for their problems. They seek help from medical professionals only as a second option. Moreover, (60.4%) of the students stated that analgesics medications are the immediate choice when they experience any pain which is also similar to earlier finding [10], [11], [12], [20].

This behavior could be a result of a number of influencing factors. Consumerism and mass media, such as magazines, newspapers and television advertisements are a leading factor [3], [13], [21], [22], [23]. The type of media conveys to the adolescents the idea that pain can be completely avoided simply by taking a pill. However, none of the side effects and dangers of taking those pills are mentioned or advertised. Another factor is the need to get a quick and rapid treatment for a pain episode rather than getting an effective non pharmacological therapy. Furthermore, adolescents tend to copy each other's behaviors and practices which could lead to consuming analgesics even if not necessary.

Limitation

Generalization of the results of this work cannot be applied beyond the study area where this work was conducted.

Safwa is a small city and may not represent other parts of kingdom where the population distribution could differ. Furthermore, participants who have chronic illnesses could have consumed other types of medications that were not listed on the study survey. The percentage of such participants can be noteworthy as hereditary hematological diseases are common in this geographical area.

CONCLUSION

Self-medication is prevalent and common among adolescent female students in Safwa city, Eastern Province Saudi Arabia. Moreover, the knowledge of analgesics side effects was inadequate which led to widespread misuse among the targeted population.

Recommendations

Medical awareness programs need to be continuously organized to educate student and their families about the proper usage of analgesics and their potential harmful side effects. Moreover, these programs can be designed to accommodate schools' staff such as teachers and counselors to arm them with the needed knowledge to guide young generations.

Additionally, social media outlets like Facebook, Twitter and Instagram should be employed to deliver simple, informative and short medical awareness messages. These social channels are widely used by young students and could be the perfect medium to deliver this vital knowledge and awareness. Moreover, such researches and their recommendations should be adopted and included in school health education classes' curriculum.

Competing interest: The authors declare that they have no competing interests.

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