

## Patient's Awareness of Using Antibiotic without Prescription

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### ABSTRACT

**Background:** there are many types of antibiotic drugs with different dosages and indications. Many patients often use antibiotics inappropriately and even without doctor's prescriptions, in this study we want to determine the antibiotics knowledge among general population of Makkah and to determine the proportion of population using antibiotics without prescriptions. **Aim of the work:** this study aimed to determine the severity of misuse of antibiotics and to educate the general population regarding the same. **Methods:** 500 questionnaires were distributed to the general adult population of Makkah. Data were analyzed to compare education level with the antibiotic knowledge, proportion of population taking antibiotics without prescription. **Results:** when comparing the males with females, statistically significant differences were obtained when inquired about knowledge of different types of antibiotics (p-value: 0.004), allergies related to antibiotics use (p-value: 0.007), differences in doses of several antibiotics (p-value: 0.019). Second comparison was done on the basis of educational levels, which revealed statistically significant differences when inquired about basic function of antibiotics (p-value: 0.000), knowledge of different antibiotic types (p-value: 0.017), allergies related to antibiotics use (p-value: 0.029). **Conclusion:** the overall level of knowledge among the studied subjects was found to be on the lower side. Females tend to have a better attitude towards the use of antibiotics as compared to males. Higher education groups utilized more antibiotics without prescription as compared to lower education groups.

**Keywords:** patient's awareness, antibiotics, prescription, Makkah, KSA.

### INTRODUCTION

There are many types of antibiotics with different dosages and indications. Many patients often use antibiotics inappropriately and even without doctor's prescriptions. Unnecessary use of antibiotics has resulted in resistant forms of bacteria, which pose a great challenge to the health of patients<sup>(1)</sup>. There are several factors associated with the use of antibiotics without prescription among general public. These include social, cultural, historical and economic factors, which play an important role in patients' decision towards the use of antibiotics without prescription<sup>(2)</sup>. There are different demographical groups of population who have the history and habit of using antibiotics without any rationale. Students are one of them, who tend to consume antibiotics without doctor's supervision. Most common use of antibiotics was observed when the studied subjects were suffered from flu<sup>(3)</sup>. Few adverse affects of irrational antibiotics use have been reported, which included adverse reactions of the drug and masking of underlying infection<sup>(4)</sup>. Self medication has been an issue of conversation among many countries. Developing as well as developed countries have reported their citizens to use antibiotics without prescription, which included Spain, Jordan, Netherlands, Sweden, United Kingdom, Italy and many more<sup>(5-7)</sup>. Additionally, few studies in Saudi Arabia have demonstrated the use of antibiotics without their doctor's prescription<sup>(8,9)</sup>. This work aimed to determine the awareness of Saudi citizens

towards the use of antibiotics without prescription and to compare the survey responses on the basis of gender and educational level.

### METHODOLOGY

#### Study design:

500 questionnaires were distributed to the general adult's population of Makkah. Data was analyzed to compare educational levels and gender on questions related to antibiotics without prescription.

#### Statistical Analysis Plan:

The data were analyzed by using descriptive and inferential statistics using Chi-square test in SPSS version 21.

#### Ethical part and confidentiality:

Waiver of informed consent was requested because it was a questionnaire-based study and ethical approval was sought from KAMC IRB. No study activities were started until the IRB approval was obtained.

### RESULTS

A total of 500 male and females filled up the online survey, which comprised 57% males and 43% females. The sample was divided into subgroups on the basis of educational level, which demonstrated that 3% were primary school, 5% were secondary school, 39% were high school, 47% were graduates and 6% were post graduates.

## Gender Ratio

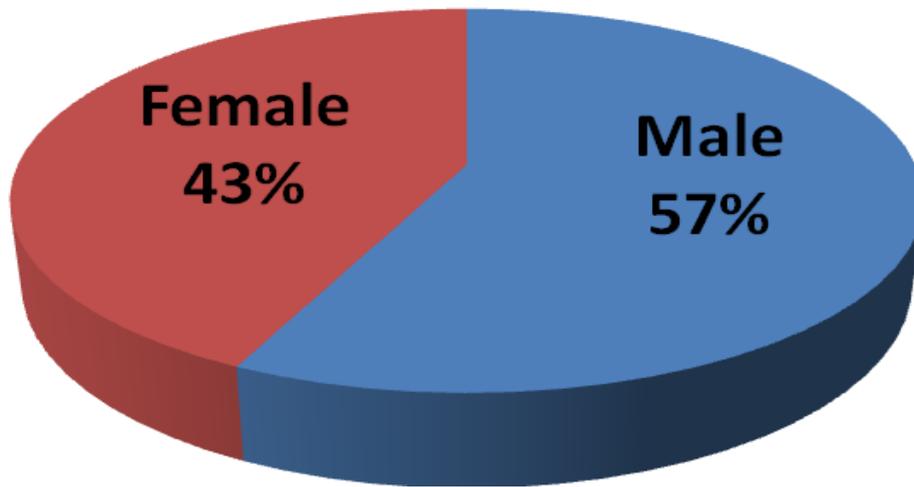


Fig. 1: Gender Ratio

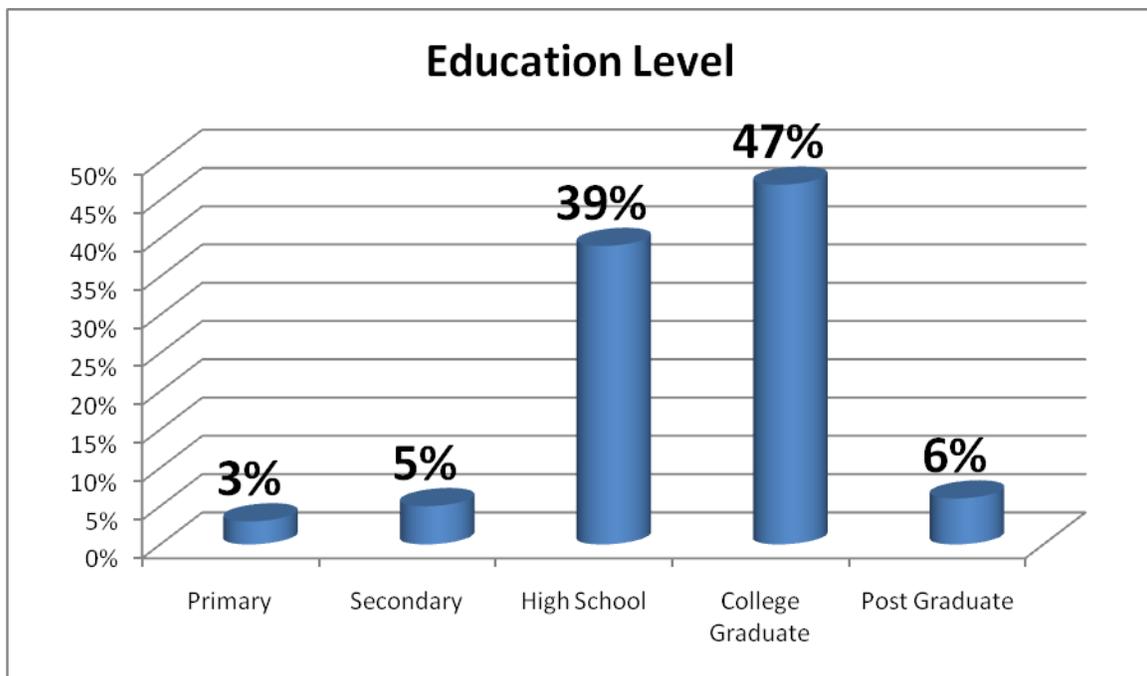


Fig. 2: Education Level

**Table 1- Comparison on the basis of gender ratio**

Item	Male	Female	P- Value
Have you ever heard of antibiotics drugs?	<b>Yes</b> <b>97%</b>	<b>Yes</b> <b>99%</b>	<b>0.143</b>
Do you know what is the basic function of antibiotics?	<b>Yes</b> <b>79%</b>	<b>Yes</b> <b>85%</b>	<b>0.054</b>
Do you know that there are several types of antibiotics?	<b>Yes</b> <b>82%</b>	<b>Yes</b> <b>91%</b>	<b>0.004</b>
Do you know that some patients are allergic to some antibiotics?	<b>Yes</b> <b>74%</b>	<b>Yes</b> <b>84%</b>	<b>0.007</b>
Do you know that there are several doses or sizes of antibiotics?	<b>Yes</b> <b>84%</b>	<b>Yes</b> <b>91%</b>	<b>0.019</b>
Do you know the side effects of antibiotics?	<b>Yes</b> <b>49%</b>	<b>Yes</b> <b>57%</b>	<b>0.074</b>
Do you know that eating some foods with some antibiotics negatively affects the effect of antibiotics?	<b>Yes</b> <b>48%</b>	<b>Yes</b> <b>53%</b>	<b>0.305</b>
Do you use antibiotics when you feel pain and stop when the pain disappears?	<b>Yes</b> <b>63%</b>	<b>Yes</b> <b>54%</b>	<b>0.032</b>
Do you know that there are diseases or symptoms not treated by the antibiotic?	<b>Yes</b> <b>63%</b>	<b>Yes</b> <b>67%</b>	<b>0.356</b>
Do you know the risk of using antibiotics in many or wrong ways	<b>Yes</b> <b>60%</b>	<b>Yes</b> <b>66%</b>	<b>0.168</b>
Have you ever used an antibiotic without prescription or without the knowledge of your doctor?	<b>Yes</b> <b>61%</b>	<b>Yes</b> <b>63%</b>	<b>0.605</b>
Have you ever advised a patient to use a non-prescription antibiotic?	<b>Yes</b> <b>37%</b>	<b>Yes</b> <b>37%</b>	<b>0.913</b>
Do you support the sale of antibiotics without prescriptions?	<b>Yes</b> <b>20%</b>	<b>Yes</b> <b>19%</b>	<b>0.591</b>
Do you know that there is a specific period of time that the patient must take when taking the antibiotic?	<b>Yes</b> <b>77%</b>	<b>Yes</b> <b>87%</b>	<b>0.005</b>

**Table 2- Comparison on the basis of education level**

Item	Primary	Secondary	High School	College Graduate	Post Graduate	P-Value
Have you ever heard of antibiotics drugs?	Yes 93%	Yes 100%	Yes 97%	Yes 99%	Yes 100%	0.183
Do you know what is the basic function of antibiotics?	Yes 36%	Yes 56%	Yes 81%	Yes 86%	Yes 100%	0
Do you know that there are several types of antibiotics?	Yes 79%	Yes 69%	Yes 87%	Yes 87%	Yes 100%	0.017
Do you know that some patients are allergic to some antibiotics?	Yes 86%	Yes 67%	Yes 75%	Yes 81%	Yes 97%	0.029
Do you know that there are several doses or sizes of antibiotics?	Yes 79%	Yes 81%	Yes 86%	Yes 88%	Yes 93%	0.528
Do you know the side effects of antibiotics?	Yes 50%	Yes 37%	Yes 40%	Yes 62%	Yes 80%	0
Do you know that eating some foods with some antibiotics negatively affects the effect of antibiotics?	Yes 43%	Yes 37%	Yes 52%	Yes 49%	Yes 63%	0.342
Do you use antibiotics when you feel pain and stop when the pain disappears?	Yes 71%	Yes 81%	Yes 59%	Yes 56%	Yes 60%	0.106
Do you know that there are diseases or symptoms not treated by the antibiotic?	Yes 71%	Yes 62%	Yes 61%	Yes 65%	Yes 76%	0.552
Do you know the risk of using antibiotics in many or wrong ways	Yes 79%	Yes 48%	Yes 55%	Yes 67%	Yes 87%	0.001
Have you ever used an antibiotic without prescription or without the knowledge of your doctor?	Yes 43%	Yes 59%	Yes 61%	Yes 64%	Yes 67%	0.565
Have you ever advised a patient to use a non-prescription antibiotic?	Yes 43%	Yes 44%	Yes 30%	Yes 41%	Yes 38%	0.213
Do you support the sale of antibiotics without prescriptions?	Yes 21%	Yes 19%	Yes 18%	Yes 21%	Yes 27%	0.8
Do you know that there is a specific period of time that the patient must take when taking the antibiotic?	Yes 85%	Yes 74%	Yes 79%	Yes 83%	Yes 87%	0.57
Do you know the risks of not completing this period of time and what may cause to the human body?	Yes 64%	Yes 44%	Yes 41%	Yes 58%	Yes 67%	0.003

**DISCUSSION**

This study aimed to investigate the attitude and awareness of Saudi citizens residing in Makkah regarding the use of antibiotics without prescription. We categorized the population in two groups and compared the responses on their basis. When comparing the males

with females, statistically significant differences were obtained when inquired about knowledge of different types of antibiotics (p-value: 0.004), allergies related to antibiotics use (p-value: 0.007), differences in doses of several antibiotics (p-value: 0.019), stop taking antibiotics when pain/infection is relieved (p-value:

0.032), specific period of time to take antibiotics (p-value: 0.005) and risks associated with not completing antibiotic course on time (p-value: 0.038). Female participants showed better level of knowledge regarding the above mentioned questions, which was also reported by another investigation conducted among Saudi population<sup>(10)</sup>.

Second comparison was done on the basis of educational levels, which revealed statistically significant differences when inquired about basic function of antibiotics (p-value: 0.000), knowledge of different antibiotic types (p-value: 0.017), allergies related to antibiotics use (p-value: 0.029), knowledge of antibiotics use (p-value: 0.000), risks of using antibiotic wrongly (p-value: 0.001) and risks associated with not completing antibiotic course on time (p-value: 0.003). Participants with higher education were found to use antibiotics without prescription as compared to lower education groups. Similar results were obtained from another study done by **Belkine *et al.*** where high educational groups were involved in using antibiotics without prescription<sup>(11)</sup>.

A study have revealed a statistically significant relationship between education and the use of antibiotics without prescription. Furthermore, it was also demonstrated that the overall knowledge and awareness of Saudis was found to be on the lower side<sup>(10)</sup> which is clear from our findings as well. There is a need to educate the public about the proper use of antibiotics in order to prevent any unwanted consequences.

One of the limitations of this study was the small sample size, which can be increased to obtain more generalized findings. Furthermore, we may also compare the study subjects on the basis of age groups to obtain a different dimension of results.

## CONCLUSION

- The overall level of knowledge among the studied subjects was found to be on the lower side.
- Females tend to have a better attitude towards the use of antibiotics as compared to males.
- Higher education groups utilized more antibiotics without prescription as compared to lower education groups.

- There is a need to educate the public about the proper use of antibiotics.

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