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Compliance to short term antibiotics in rural and urban areas in Al-Ahsa-KSA

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Abstract:

Background: non-adherence to medication is considered as one of the largest drug related issues in the medical field. It results in development of drug resistance besides other harmful effects on the health of individuals. **Aim of the work:** there is very little data about compliance in Saudi Arabia. So, we conducted this study to see the adherence to the antibiotics by the patients in Al-Ahsa comparing the urban and rural population. M**ethods:** this was a cross sectional observational study in which 215 people were asked questions about the adherence to the antibiotics prescribed by physicians. A convenient sample of 215 people was selected due to the constraint of resources (Finance and time). A questionnaire was designed to include the questions about the adherence to the antibiotics prescribed besides demographic characteristics. Data were entered in SPSS statistic20 which was also used for analysis by using crosstab for the numeric data and chi-square was used to see if there was a relationship between variables. R**esults:** the present results showed that 70.69% of the population was not adhering and 29.30% were adhering to the antibiotic course. In urban population, 38% of the people were adhering to the short term antibiotics compared to 22% in rural areas. **Conclusion:** there is a need for increasing the awareness about completing the antibiotic course among the people in general and in rural areas in particular.

Introduction

Compliance to the drugs can be described as taking the drugs according to the prescription by the physician [(1)].However, non-adherence to medication is considered as one of the largest drug related issues [(2)].It is believed that it is big problem in many societies of the world [(2)]. Not taking the antibiotics according to doctor prescription may lead to drug resistance [(3-7)]. There are many kinds of drug compliance, but this research focused on the adherence to short term antibiotics. In 2013 a study conducted in Riyadh found that non-compliance resulted in several undesired consequences. Admissions due to non-compliance had been estimated to account for up to 10.5% of all admissions to hospital [(7)]. In 2012 there was a study in Germany about medication adherence and it showed that 33% of Germans repeatedly fail to follow their doctor's recommendations regarding the pharmacological treatments and only 25% of Germans describe themselves as fully adherent[(5)].There was little data about compliance in Saudi Arabia. So, we conducted this study to see the adherence to the antibiotics by the patients in Al-Ahsa comparing the urban and rural population. The question was "are we taking our antibiotics in the right way?" This was what our research based on. The aim of this research was to determine how many people were adhering to their medications and what were the reasons of non-adherence?

Method and procedures:

This was a cross sectional observational study in which 215 people were asked questions about the adherence to the antibiotics prescribed by physicians. A convenient sample of 215 people was selected due to the constraint of resources (Finance and time). The questionnaire was designed to include the questions about the adherence to the antibiotics prescribed besides demographic characteristics. The target population in this research was adults in the rural and urban society groups. This was a cross sectional observational study in which 215 people were asked questions about the adherence to the antibiotics prescribed by physicians. A convenient sample of 215 people was selected due to the constraint of resources (Finance and time). A questionnaire was designed to include the questions about the adherence to the antibiotics prescribed besides demographic characteristics. Procedure for data collection included visits to public places in urban areas (Malls, university, public street) and to different rural areas (Villages, farms, desserts). Data were entered in SPSS statistic 20 which was also used for analysis by using crosstab for the numeric data and chi-square was used to see if there was a relationship between variables.

Results:

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The result of our research showed that only 63(29%) individuals were adhering to the antibiotic and 152(71%) were not adhering out of 215 individuals within urban and rural areas. In urban population, 36% of the people were adhering to the short term antibiotics compared with 22% in rural areas. Main reason mentioned for not adhering was that when they felt well, they left the antibiotics. Most common reason mentioned was the same (Feeling well). Other reasons mentioned for non-adherence were detected in **figure 1.** The mean age of the population was 28.4 years. Most common duration for antibiotics prescription was 4 – 7 days in both rural and urban areas and the usual number of times taking the antibiotic was twice daily. As can be seen in **table 2**, there was a significant difference in adherence to the antibiotic in rural and urban areas. The common disease experienced from the study population was ENT infection then other diseases they mentioned by themselves rather than choosing the common diseases from the questionnaire, like teeth infections, acne, wounds etc. Almost 65% from each category of disease was not adhered to the antibiotic.

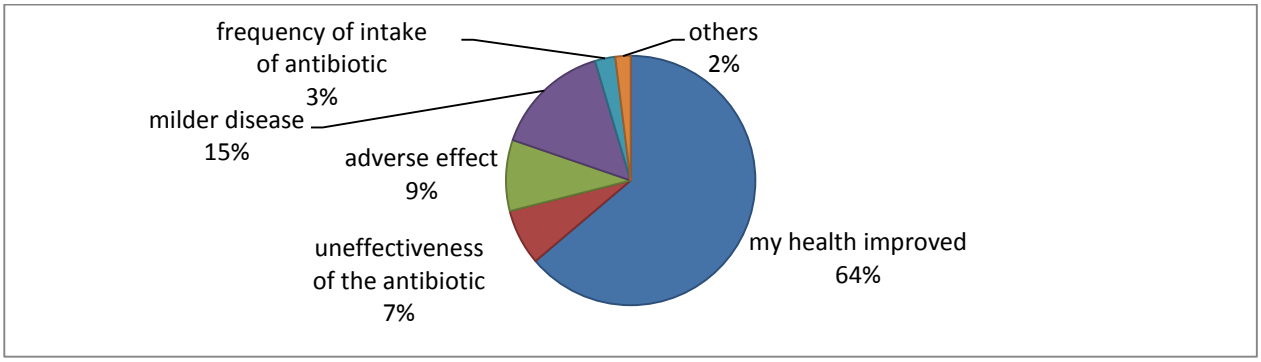

Figure1: causes of not adhering to the antibiotics

Table1: Demographic data of study population (n=215).

Variable		Number (%)
Gender	Male Female	127 (59.1%) 88 (40.9%)
Residency	Urban Rural	111 (51.6%) 104 (48.4%)
Job	General section Private section Student Retired No job	68 (31.6%) 33 (15.3%) 69 (32.1%) 3 (1.4%) 42 (19.5%)
Level of education	Bachelor High school Less than high school Others (Diplomas, Masters)	81 (37.7%) 96 (44.7%) 27 (12.6%) 11 (5.1%)
Living status	Single Parents Wife/husband	64 (29.8%) 47 (21.9%) 104 (48.4%)
Income range	Less than 3000 3000 – less than 5000 5000 – less than 10000 10000 or more	70 (32.6%) 28 (13%) 56 (26%) 61 (28.4%)

Table2: relationship between demographic variables and rate of compliance

variable		Fully adhered (%)	Not adhered (%)	Difference (P-value)
Gender	Male n=127 Female n=88	38 (30%) 29 (33%)	89 (70%) 59 (67%)	0.836
Residency	Urban n=111 Rural n=104	40 (36%) 23 (22%)	71(64%) 81(78%)	0.033
Job	General section n=68 Private section n=33 Student n=69 Retired n=3 No job n=42	26 (38%) 7 (21%) 17 (25%) 2 15 (36%)	42 (62%) 26 (79%) 52 (75%) 1 27 (64%)	0.483
Level of education	Bachelor n=81 High school n=96 Less than high school n=27 Others(Diplomas, Masters)n=11	25 (31%) 29 (30%) 7 (26%) 6	56 (69%) 67 (70%) 20 (74%) 5	0.209
Living status	Single n=64 Parents n=47 Wife/husband n=104	13 (20%) 13 (28%) 41 (39%)	51 (80%) 34 (72%) 63 (61%)	0.275
Income range	Less than 3000 n=70 3000 – less than 5000 n=28 5000 – less than 10000 n=56 10000 or more n=61	20 (29%) 5 (18%) 22 (39%) 20 (33%)	50 (71%) 23 (82%) 34 (61%) 41 (67%)	0.150

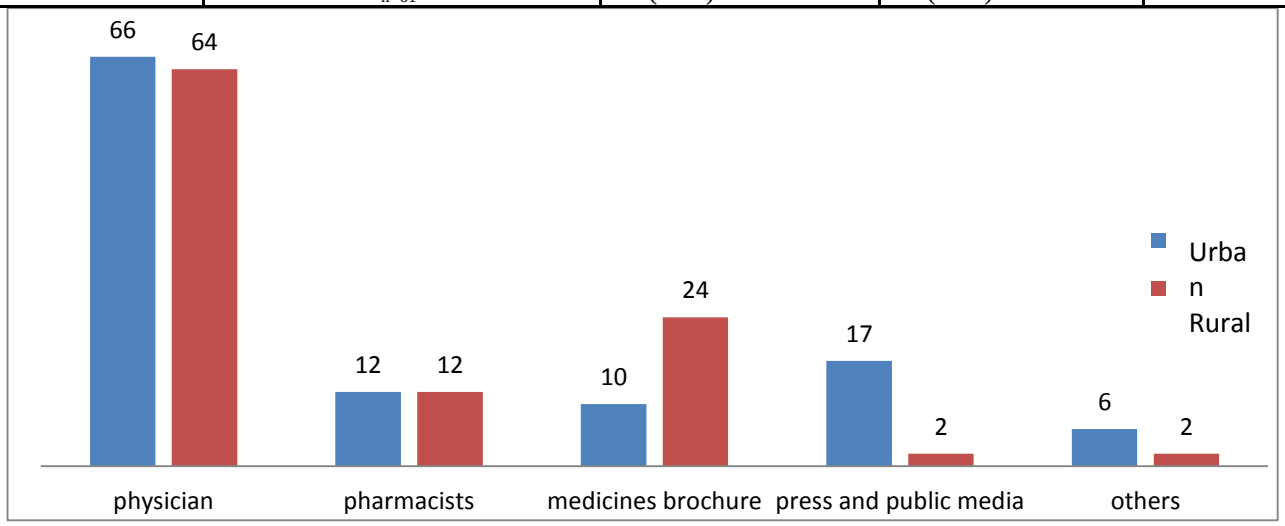

Figure2: patient's source of the medical information

Figure 2 showed the sources of information of the respondents of our study. Physician were the main source of information mentioned by the people in both urban and rural areas. Pharmacists and medical brochures were the other common reason mentioned as source of information by the people. More people from rural areas mentioned medicine brochures as source of their information than the urban people, while press and public media as source of information was mentioned more by the urban people.There were 197 people who experienced improvement from the antibiotic while,18 people mentioned no improvement with the antibiotics. The most common reasons for not taking the antibiotics mentioned by the people included improvement in health, milder condition and adverse effects of the antibiotics. Other reasons included forgetting the medicine. Similarly, most common reasons for adhering to the antibiotics mentioned were "to improve my health", " follow the doctor's advice" and "reduce spread of diseases". Finally, there was a question about population's opinion of what doctor should do to make the patient adhere to the antibiotic. About 40% of respondents said "advice by the doctor to the patients" could improve the compliance.

Discussion

The present results showed that 70.69% of the studied population was not adhering to the short term antibiotics, while only 29.30% were adhering to the antibiotic course. There was a statistically significant difference in adherence to the short term antibiotic in rural and urban population. This was expected as urban population is generally more aware about the health related issues than the rural people. Furthermore, there was a trend of increased adherence to the short term antibiotics with increasing level of education, although this difference was not statistically significant. Similarly, highest adherence was found in the married couple compared to the single individuals or the parents giving the antibiotics to the children. This finding is in line with the views of Weiden [6] who detected that interaction of the patients with other people can improve the compliance. Our results are similar to the findings Xi **Tan *et al*.** [2] who found that 62.4% of the studied population had poor compliance with their prescribed regimen. In our research, we expected that almost everyone in the population had used antibiotics in sometimes not just the patients who were already in hospitals.

Another research was done by **Glombiewski *et al.*** in Germany showed that 33% of Germans repeatedly fail to follow their doctor‘s recommendations and only 25% of Germans described themselves as fully adherent [5]**.**

Conclusion and recommendation:

There was a significant difference in adherence to antibiotics between the rural and urban populations; urban population are adhering more to the antibiotics. Similarly, there was a trend of increased adherence to the short term antibiotics with increasing level of education. There is a need for increasing the awareness about completing the antibiotic course among the people in general and in rural areas in particular. This will help in minimizing the most common reason mentioned by the people that they leave the antibiotics when they feel better.

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References:

1. **Moradi M, Hamedi Shahraki S and Rezayee M (2013):** Compliance with antimicrobial therapy: evaluating the related factors. Journal Pharmaceutical Care, 1(2): 60-64.
2**. Xi T(2014):** Review of the four item Morisky Medication Adherence Scale (MMAS-4) and eight item Morisky Medication Adherence Scale (MMAS-8) . Innovations in Pharmacy, 5(3): 165-173.
3. **Mitchison DA (1998):** How drug resistance emerges as a result of poor compliance during short course chemotherapy for tuberculosis. Int .J.Tuberc. Lung Dis., 2(1):10-15.
4. **Al-Shammari S A, Khoja T and Al-Yamani MJ (1995):**Compliance with short-term antibiotic therapy among patients attending primary health centers in Riyadh. Saudi Arabia J. R. Soc. Health,115 (4):231-235.
5. **Glombiewski JA, Nestoriuc Y, Rief W, Glaesmer H and Braehler E (2012):** Medication adherence in the general population. PLoS One, 7(12): 50537-50543.
6. **Weiden p (2015):** How to help someone who stops taking their medicines. Available at: http://www.schizophrenia.com/family/compliance1.html
7. **Gottlieb H (2015):** Medication nonadherence: finding solutions to a costly medical problem, Available at: http://www.medscape.com/viewarticle/4099406