Arch Pediatr Infect Dis. 2019 July; 7(3):e91217. doi: 10.5812/pedinfect.91217.

Published online 2019 August 5. **Research Article**

A Survey of Pediatricians' Views and Practices Regarding Parents' Request for Prescribing Antibiotics: A Qualitative Study

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Received 2019 March 04; **Revised** 2019 June 04; **Accepted** 2019 July 21.

Abstract

Background: Bacterial resistance is considered an important concern in health care medicine. There is a close relationship between the use of antibiotics and drug resistance.
Objectives: In this study, pediatricians' views and their practices regarding parents' request for prescribing antibiotics when they did not see the need for the prescription and their opinions and suggestions were studied.
Methods: This study was a qualitative cross-sectional interviewer assist study of pediatricians using a validated self-designed questionnaire. The study population included one hundred pediatricians in Tehran province from January to May 2018. Sampling method was non-probability convenience method.
Results: The mean age of the participants was 37.04 ± 5.9 years, 47% male, and 53% female. The frequency of parents' requests from pediatricians to prescribe antibiotics was 53% and about 45.3% of them agreed with this request. Gender was significant in participants' agreement with the request of parents (60% in male and 26% in female). The important issues of this agreement were: the absence of a definitive clinical diagnosis (51%); when the initial treatment was not effective (39%); and concerned about legal consequences (51%). About 54.7% did not agree with this request. The most important issues of disagreement were: confirmation of clinical diagnosis (79%), and when pediatricians did not feel pressure from the parents (73%). The most important recommendation by the participants to reduce parents' request included an adequate explanation and counseling with parents at the time of the visit (70%), increasing parental information in the community (62%), and the standardized guidelines for the treatment of diseases (51%).
Conclusions: Based on the results, consultation with parents reduces parental concern and pressure. The parental information still plays a major role in the proper use of antibiotics. Retraining pediatricians and preparation of guidelines can be effective in increasing their confidence and correct diagnosis and prescribing decisions.

Keywords: Antibiotic, Drug Resistance, Parents Request, Pediatricians

1. Background

The uses of antibiotics in viral infections of the upper respiratory tract not only are not effective but also lead to the bacterial resistance to the drugs. Conversely, in some cases, the lack of antibiotic use can lead to serious complications for the patient; for example, streptococcal pharyngitis can lead to rheumatic heart disease (1). Informing the parents about which of the symptoms of a child' infection is worrying and require a doctor's visit may be helpful in making appropriate decisions; consequently, it is effective in reducing the visits and antibiotic prescription (2). Today, bacterial resistance is considered an important concern in healthcare medicine. There is a close relationship between the use of antibiotics and drug resistance. The inappropriate administration (excessive use or misuse) of antibiotics by physicians is one of the main causes of drug resistance. Drug resistance can threaten the treatment and prevention of diseases and more importantly, cause the spread of infections and also increase the mortality rates. It can also prolong the treatment period and as a result, increase the cost of the treatment. Since the parents' request from physicians to prescribe antibiotics is an important factor in this issue and is indirectly effective in prescribing antibiotics. Some physicians prescribe the antibiotics when they are being pressured by parents or relatives of them (3).

A study in Greece showed that although 80% of parents agreed that most of the upper respiratory tract infections are self-limited, 74% of them requested to prescribe antibiotics (4). Studies have shown that some pediatricians and

family physicians prescribe antibiotics even for nasal congestion less than one day (5). Another study found that 65% of the 113 adult patients with viral upper respiratory tract symptoms had an antibiotic prescription, and physicians prescribed antibiotics with the knowledge of this issue (6). Another study had shown that some physicians were not always satisfied with the diagnostic criteria and appropriate antibiotic prescription. It was noteworthy that these doctors had approved the administration of antibiotics despite the lack of necessity (7). A study in Palestine showed that inadequate knowledge of parents about the use of antibiotics increased their use by self-administration or pressure on the physician. They believed that the training of parents and families was essential for the proper use of antibiotics (8). A study found that 32% of parents had an appointment from physicians for antibiotic prescription. This request was 65% when the child was ill; however, only 24% of physicians agreed with this request (9). In another study, it was shown that symptom relief with the use of analgesics may reduce antibiotic prescriptions in children for example in viral otitis media (10).

Antimicrobial prescribing is one of the most important therapeutic measures in the field of infectious diseases and can lead to several problems when it is used incorrectly. Therefore, the overuse of antibiotics is not only costly but also increases the risk of human health by increasing drug resistance. In addition, physicians should be aware that the misuse of antibiotics not only increases the cost of treatment, the side effects of drugs, and drug resistance but it is also unethical (11). Despite the prevalence of overuse or misuse of drugs and increasing costs of treatment, we aimed to evaluate the antibiotics administration process. If we want to reduce the excessive use of antibiotics, especially in children, we need to know how the family plays a role in prescribing patterns of physicians and more importantly, how physicians react to this.

2. Objectives

In this study, the pediatricians' views and their practices to parents' request regarding antibiotic prescribing when they did not see the need for prescription and their opinions and recommendations were studied, and it was also examined how many percent of them agreed with this request, in order to find the appropriate solution to reduce the misuse of antibiotics and as a result, to reduce drug resistance.

3. Methods

3.1. Research Team and Reflexivity

The questioner of this study was a male doctor who worked at the military university of medical sciences and was carried out for his Ph.D. thesis, which was informed to the participants.

3.2. Study Design

This study was a qualitative cross-sectional interviewer assist study of pediatricians using a thematic analysis.

3.3. Participant Selection

The study population included one hundred twenty pediatricians in Tehran province from January to May 2018, of which twenty participants refused due to the lack of willingness, inadequate time of the participants, failure to complete the questionnaire, and or other personal reasons. Sampling method was non-probability convenience method.

3.4. Setting

The questionnaire was completed by participants in an office, private pediatric clinic, and public hospital. At the time of the interview, there was no other person other than the questioner and participants.

3.5. Data Collection

Participants approached by face-to-face interview with a validated self-designed questionnaire targeting pediatricians' views and practices regarding parents' request for antibiotic prescribing when they did not see the need for prescription and their opinions and suggestions. The questionnaire consisted of eighteen questions that were designed in three sections. The first section included demographic data; age, sex, years of working and place of practice. The second section included the frequency of requests of parents for prescription of antibiotics by physicians and the reasons for their agreement or refusing of these requests. The last section included physicians' recommendations for reducing parents' requests from physicians. In the pilot study with 15 participants, the reliability of the questionnaire using the Cronbach's Alpha method was 86%. The time of completion of the questionnaire was about 10 - 15 minutes.

3.6. Data Analysis

The data were analyzed by SPSS version 24. For quantitative variables, the mean and standard deviation and for qualitative variables, the frequency and frequency percent were used. The results were analyzed with *t*-test for quantitative-distance variables and chi-square for qualitative-nominal variables. P value < 0.05 was considered significant.

3.7. Ethical Considerations

In all stages of the study, ethical issues of observation, the name and information of participants were kept confidential. The Ethics Committee of AJA University of Medical Sciences approved this study.

4. Results

One hundred pediatricians completed the questionnaire (83.4% response rate). The mean age of the participants was 37.04 with a standard deviation (SD) of 5.9 years. Moreover, 47% of the participants were male and 53% female. They were in practice for 7.02 with SD 5.7 years; worked in office 48%, private pediatric clinics 18%, and public hospitals 34%; and saw an average of 92 children per week (Table 1).

Table 1. Demographic Factors of the Participants

Variables	Values
Age, mean ± SD	37.04 ± 5.9
Gender, %	
Male	47
Female	53
Place of work, %	
Office	48
Clinic	18
Hospital	34
Years of work	7.02 ± 5.7
Number of visits	92

Abbreviation: SD, standard deviation.

The frequency of parents' requests from pediatricians to prescribe antibiotics when the pediatricians did not see the need for prescription was 53% (53 participants) and about 45.3% of them (24 participants) agreed with this request (60% male and 26% female). The important issues of this agreement were: the absence of a definitive clinical diagnosis (51%), fever above 39 degrees, and patients' illness during initial visit (63%), when the patients came back for a second visit (41%), when the initial treatment was not effective (39%), concerned about legal consequences (51%), and to be effective in practice (26%).

About 54.7% (29 participants) did not agree with this request. The most important issues of disagreement were: confirmation of correct clinical diagnosis (79%), concern about the drug reactions (36%) and resistance (56%), and when pediatricians did not feel the pressure from the parents (73%). The most important recommendation by the participants to reduce parents' request for inappropriate administration of antibiotics included: an adequate explanation and counseling with parents at the time of the visit (70%), increasing parent information in the community (62%), and the standardized guidelines for the treatment of diseases (51%).

5. Discussion

Bacterial resistance is considered an important concern in health care medicine. There is a close relationship between the use of antibiotics and drug resistance. Most of the previous studies in different countries, including in Singapore (12), Jordan (13), Saudi (14), United Kingdom (15), Poland (16) and Norway (17), studied parents and public knowledge, attitudes and practices with regard to antibiotic prescribing, but in our study, pediatricians' views and their practices to parents' request for antibiotics when they did not see the need for prescription and their opinions and suggestions were studied. The frequency of parents' requests from pediatricians to prescribe antibiotics was 53% (53 participants) and about 45.3% of which (24 participants) agreed with this request. Gender was significant in agreement of the participants with parents' request for antibiotic prescription, which was seen more in the males 60% (26% in the female pediatricians) (Table 2). The reasons for this difference may be as follows: working hours, close relationship with parents, and enough time on the child's visit and adequate advice and explanation to the parents when they did not need to prescribe antibiotics. In a study in Lebanon, consistent with our study, male physicians agreed with the request of parents for antibiotic prescription more than female ones (18).

Age, place of work, and years of employment were not significant. Although the place of practice and age of pediatricians was not statistically significant, in numerical terms, the agreement of the participants to the request of parents, in private office and < 35 old age were higher than the public hospital (48.1% versus 38.8%) and > 45 old age (52.3% versus 43.7%). Perhaps the reason for these differences is that the pediatricians have been more likely to be

Table 2. Demographic Factors Based on Parents' Request and Agreement of the Participants[a]

	Groups, No.	Parents' Request	Agreement	P Valve
Gender				0.042[b]
Male	47	30 (64)	18 (60)	
Female	53	23 (43.3)	6 (26)	
Age, y				0.887
< 35	37	21 (56.7)	11 (52.3)	
35 - 45	31	16 (51.6)	6 (37.5)	
> 45	32	16 (50)	7 (43.7)	
Work, y				0.365
< 5	34	19 (55.8)	9 (47.3)	
5 - 10	33	18 (54.5)	7 (38.9)	
> 10	33	16 (48.4)	8 (50)	
Place				0.144
Office	48	27 (56.2)	13 (48.1)	
Clinic	18	8 (44.5)	4 (50)	
Hospital	34	18 (53)	7 (38.8)	

[a]Values are expressed as No. (%) unless otherwise indicated.
[b]Gender was significant in agreement of participants with the request of parents to prescribe antibiotics by pediatricians when they did not see the need for prescription who were seen more in males (P = 0.042). Age, place of work, and years of employment were not statistically significant (P > 0.05).

influenced by parents' requests, and also attracting parents' opinion has been effective on the decision of participants. If the number of participants was higher, maybe the place of work and work's experiences in physicians would be statistically significant.

In our study, 62% of the pediatricians believed that increasing the knowledge of parents is effective in reducing the misuse of antibiotics. One of the ways to raise the public knowledge is the use of leaflets and public media (19).

Parents' concern and request can be effective in diagnosis or treatment decision by physicians. One study had shown that fever (64%) was the most reasons and in another study C reactive protein > 20 mg/L was the significant factor for parents' request for antibiotics (20). But in our study, in addition to fever, other factors were also evaluated. This study showed that the most important factors were: the absence of a definitive clinical diagnosis; fever above 39 degrees, and patients' illness during the initial visit; when the patients came back for a second visit and when the initial treatment was not effective.

A study showed that the use of the guidelines reduced the antibiotics prescribing 74% to 44% (P < 0.001). In this regard, retraining of pediatricians and preparation of guidelines can be effective in increasing their confidence and correct diagnosis and prescribing decisions in reducing the misuse or overuse of antibiotics (21). Also, in our study, 51% of pediatricians recommended that guidelines were effective for proper treatment and reducing the misuse of antibiotics.

Another way to alleviate parental concern and pressure for prescribing antibiotics is to spend time on the visit of patients and provide adequate advice and consultation for the parents (22). In our study, 70% of pediatricians believed that the most important recommendation was accurate and adequate consulting with the parents during the child's visit.

Another important issue was the parents-physicians' trust, which results in the agreement of parents with the decisions of the physicians. The close relationship and consultation between parents and clinicians lead to parents' trust. One study found that 50 of 63 parents accepted the physician's decision. Trust led to the proper antibiotic prescription and reducing parents request from clinicians (23). This study did not evaluate the reasons for trust. But our study showed that the most important factors of parents' trust were a correct clinical diagnosis and an extensive and clear explanation to parents.

The main limitations of our survey were the lack of trust and collaboration of participants with the questionnaire, especially in private pediatric clinics. Inadequate time of participant and threat to their jobs were the main causes of their concern. It is recommended that other stud-

ies in this field should be carried out with larger sample size and multi-provincial to evaluate more precisely pediatrician's views and their practices to parents' request for antibiotics.

5.1. Conclusions

Based on the results, consultation with parents reduces parental concern and pressure. The parental information still plays a major role in the proper use of antibiotics. In this regard, the use of leaflets and public media may be helpful. Meanwhile, it is very important to inform parents about which of the symptoms of a child' infection is worrying and require a doctor's visit, may be helpful for appropriate decisions; consequently, it is effective in reducing the visits and antibiotics prescription. Physicians-parents' trust is important. Parental trust in the diagnosis and decision making of physicians are key points in reducing the misuse or overuse of antibiotics. It is possible to do this by spending enough time on visiting the patients and explaining clearly the situation of the child to them. Retraining of pediatricians and preparation of guidelines can be effective in increasing their confidence and correct diagnosis and prescribing decisions.

Acknowledgments

The authors thank the pediatricians and all participants in this research and all those who helped us to complete this project.

Footnotes

Authors' Contribution: Bijan Rezakhaniha carried out the design and coordinated the study, participated in most of the experiments and prepared the manuscript. Soheila Siroosbakht assisted in the design of the study, coordinated, participated in manuscript preparation, and contributed to the drafting process.

Conflict of Interests: The authors had no conflict of interest.

Ethical Approval: The Ethics Committee of Army University of Medical Sciences approved this study.

Financial Disclosure: We have no financial interests related to the material in the manuscript.

Funding/Support: This study was not sponsored.

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