

PHARMACIST LED INTERVENTION ON KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS ANTIBIOTICS USE AMONG GUARDIANS OF PEDIATRIC PATIENTS ATTENDING IN TERTIARY CARE HOSPITAL, POKHARA, NEPAL

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Abstract

Background: Antimicrobials resistance occurs when a drug loses its ability to inhibit bacterial growth effectively and poor knowledge of guardian towards it is one of the leading causes of antimicrobials resistance in their children.

Purpose of the study: The present study aims to improve knowledge, attitude and practice towards antibiotics use among guardians of pediatric patients attending in tertiary care hospital, Pokhara, Nepal.

Methods: An interventional study among 86 guardians was conducted in pediatric ward of hospital using census technique. KAP of guardians before and after the educational intervention was studied to compare KAP score. KAP scoring was done on the basis of Likert scale. Additional information for the study was obtained from the patient medical file.

Results: The average age of the guardians was 28.59 years (SD±5.785) and majority (83%) belonged to Hindu religion. Result showed that (82.6%), (91.9%), (91.9%), (73.3%) and (10.5 %) parents had knowledge about commonly used medications Antibiotics, Analgesics-antipyretics, analgesics, antihistamine and normal saline nasal drops, respectively. The median knowledge, attitude and practice scores after the intervention were 16, 23 and 26 respectively while the overall median score increased to 65. By using the Wilcoxon signed ranks test, knowledge (p<0.001), attitude (p<0.001), practice (p<0.001) and total scores (p<0.001) increased after the intervention.

Conclusion: Despite of good knowledge and positive attitude regarding antibiotics use and resistance but good practice is very low. Therefore there is need to educate parents on the rational use of antibiotics with further interventional study.

Keywords: antibiotics; attitude; knowledge; parents; pediatric patients.

Introduction

Antibiotics are given to humans and animals for therapy and prophylaxis of infectious diseases^[1] and also used in animals for growth promotion and, to a lesser extent, in agriculture for plant protection and in industry.^[2]

Infancy and childhood is a period where children suffer frequently but usually with non-serious illnesses.^[3] where irrational use of antibiotics are more common which may even lead to further infections.^[4] Globally, about 50% prescription is for unwanted medication.^[5] A comprehensive meta-analysis of 32 antibiotic resistance studies from Nepal shows resistance rates were well above 50 percent for all the drugs tested, including from greatest to least resistance. Resistance to all drugs increased from 2006 to 2010.^[6]

Poor knowledge towards antibiotic is one of the leading causes of antibiotic resistance.^[7] Present study aims to improve knowledge, attitude and practice towards antibiotics use among

guardians of pediatric patients attending in tertiary care hospital, Pokhara, Nepal.

MATERIALS and METHODS

It was a prospective, interventional interview which was carried out in Pediatric ward of Manipal College of Medical Sciences Pokhara, Nepal by graduate pharmacists. In this technique, all the guardians of pediatric patient were covered. A total of 86 guardians were included. The self-administered questionnaire for Knowledge, Attitude and Practice (KAP) were prepared consisting of 29 questions. First the questionnaires were prepared in English and were translated to Nepali Language for patients and questionnaires were validated by a group of pharmacists and Nepali language expertise. All Guardians enrolled in the study were provided with Nepali language questionnaire. KAP was measured before and educational intervention was given on the same day. On the day of discharge, again the same questionnaire was used to measure KAP. A standardized (WHO/APUA-Nepal) posters and patient information leaflet in local language was used. Informative leaflet was developed including about disease medication, self-care management necessary for child disease prevention and was provided to the guardians during intervention.

Ethical approval (Ref no. 159/074/075) was taken from Pokhara University Research Centre Kaski, Nepal and data collection approval were obtained from Manipal IRC (Ref no.1296-MCOMS/IRC), Manipal College of Medical Sciences Pokhara, Nepal. Similarly, informed consent was obtained with guardians of admitted pediatric patients (only of those pediatric patients, who receive antibiotics during their admission).

Guardians of admitted pediatric patients (only of those pediatric patients, who receive antibiotics during their admission) and only those guardians were included who were willing to take part in the study. Guardians of patient who don't receive antibiotic therapy were excluded from the study.

Results

Demographic details

86 Parents of Pediatric patients at Manipal Teaching Hospital including 39.5% male and 60.5% female participants. The average age of the participant in years was 28.59 SD±5.785. Majority of the respondents belonged to 83% Hindu religion. Nearly half were upper cast group 43.0% and 29.1% were Dalit 18.6% were disadvantage janajati 8.1% belongs to relatively advantaged janajati. Regarding parent's educational status, the distribution of participants was as follows 18.5 % had no formal schooling, 40.7 % completed primary level, 23.3% studied secondary level, 9.3% completed higher secondary level 3.5% completed college and 5.8% completed university education. Similarly, results showed that 76.7 % reported that they had not done any type of insurance and 17.4 % had done private type insurance. 69.8% family had medium income whereas 15.2% family had low income. Study showed that, 69.8% were living at medium town whereas 23.3% reported that they were living in village, and 8.1% living at big town. About 16.3 %, 72.1% and 11.6% had good, medium and poor perceived from health care system. Most of respondent said that physician, friend and television were source of information. The detail of socio-demographic characteristics is given in Table 1.

Knowledge about commonly used medications

The result showed that 82.6%, 91.9%, 91.9%, 73.3% and 10.5 % parents had knowledge about commonly used medications Antibiotics, Analgesics-antipyretics, analgesics, antihistamine and normal saline nasal drops, respectively as shown in Table 2.

Parental reasons for giving their child antibiotics

Respondent said that before intervention, 21% used antibiotic without doctor advice were due to: lack of time or money 16.3%, due to Non-serious status of the child. Similarly self-prescribed 17.4%, pharmacist recommendation 8.2% friend/family relative advice 4.7% were the reasons for giving antibiotics to the child without doctor advice. After intervention antibiotics used without the doctor's advices self-prescribed 2.3%, friend/family relative recommendation 4.7% and Lack of Times or money to visit physician 1.2%. The details of

reasons for giving antibiotics to child is in table 3.

Scores of knowledge attitude practices and over all

KAP scores before the intervention were 13, 20, and 19. Overall score was 52. KAP scores after the intervention were 16, 23 and 26. Overall median score increased to 65. The median scores of knowledge attitude practices and overall is presented in table 4.

Scores of before and after intervention of various subgroups of respondents

Knowledge

Knowledge scores improved among females compared to males. The scores improved from 41 to 45. Similarly, the scores of knowledge for age below 20 and 21-30 were improved after intervention. Guardians from the upper caste, dalit, disadvantage janajati, religious minorities, and other groups showed a significant improvement of knowledge after the educational intervention. Guardians with bachelor level, primary level and literate of qualification showed greater improvement in the knowledge scores compared to guardians having intermediate level of qualification. Table 5

Attitude

The Attitude scores improved among females compared to males. The scores improved from 41 to 42. Similarly, the scores for attitude, age below 20 and 21-30 knowledge were improved after intervention. Guardians from the upper caste, dalit, disadvantage janajati, religious minorities, and other groups showed an improvement of attitude after the educational intervention. Guardians with bachelor level, primary level and literate of qualification showed greater improvement in the attitude scores compared to guardians having intermediate level of qualification. Table 5

Practice

The attitude scores improved significantly among females compared to males. The scores improved from 38 to 45. Similarly, the scores for practice, age below 20 and 21-30 knowledge were improved after intervention. Table 5

Discussion

This research was aimed at determining KAP towards antibiotics use among guardians of pediatric patients before and after an educational intervention. One to one interview with structured questionnaire and educational intervention were carried out with the guardians attending pediatric ward. The overall median total scores improved significantly after post-intervention.

The study showed, most of respondents had age group to have kids in Pediatric age group which is comparable to study conducted by Siddiqi et al., 2014.^[8] Similarly, respondent of female is higher than male because mother's responsibility on children is higher than father in Nepal Which differ with the study conducted by Dossari et al., 2013.^[9]

Nepal being the predominant Hindu inhabitant may be the reason behind this 96.5% respondent following Hindu religion. Very few respondents 5 out of 86 i.e. 5.8% had university degree, it may be due to the Early marriage rate in Nepal.^[5] In this study, upper caste respondents was high, this is not comparable to the article conducted by Jha et al, 2014.^[5]

Most common reason described for self-administration of antibiotics were mentioned to be lack of time or money 21% Non-serious status of the child 16%, pharmacist recommendation 8.2% were the reason for giving antibiotics to the child without physician's advice, which is similar to study done by Siddiqi et al., 2014.^[8] In this study, it was improved after intervention.^[9]

In this study majority of respondent have medium scale of income. This can be explained as, that those with poorer income have little access to health care systems, our finding suggests that efforts of education should target parents with low-income levels to reduce misconceptions and poor knowledge about antibiotic use.^[10]

In this study, Source of information about antibiotics was doctors, television and friends. This result was similar to that from studies conducted in Saudi Arabia and Cyprus.^[11] Although we

are living in a high technology and informative era, only a small proportion of parents take initiatives in finding information regarding antibiotics through the Internet. On the other hand, medical doctors have the maximum responsibility in educating the community, as majority of the parents rely on doctors for medical knowledge. Therefore, as a primary prevention step to treat this issue, doctors should spend more time in educating patients. This exercise would definitely enhance the amount of knowledge patient's gain from the consulting doctors. [12]

In this study, 82.6% of the parents desired only antibiotic therapy because the majority of them also preferred other drugs given for symptomatic therapy as paracetamol and analgesics. This value decline to 17% after intervention. This result is better than the study done by Dossari et al., 2013. [9]

The KAP was increased after intervention result showed that, there is association between intervention and KAP. Some of the participants had a query about the beneficial and harmful effects after switching over to another brand of the same generic antibiotics. Certain participants were interested to know about the frequency of using anthelmintic for their child. Few questions were asked about the use of vitamins and tonics to their child without any defined clinical indication. Result also revealed that the effect of intervention was associated with a significant increase in correct knowledge about action of antibiotics and excellent knowledge on methods of administration of antibiotics. [5]

KAP regarding medicines were noted among a guardian of pediatric patient. Their association with demographics was measured. The scores were compared before and after the educational intervention. An educational intervention was found to be effective in significantly improving knowledge, attitude and practice scores. More interventional research is needed on antibiotics use in children.

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TABLE 1. SOCIO DEMOGRAPHIC CHARACTERISTICS.

Variables	(n)	(%)
Sex		
Male	34	39.5
Female	52	60.5
Age of participants		
Less than 20 Years	3	3.5
21 – 30 Years	52	60.5
31 – 40 Years	31	36.0
Age± SD 28.59±5.785		
Religion		
Hindu	83	96.5
Christian	1	1.2
Buddhist	1	1.2
Muslim	1	1.2
Ethnicity		
Upper cast group	37	43.0
Dalit	25	29.1
Disadvantage janajati	16	18.6
Relatively advantage janajati	7	8.1
Religious minorities	1	1.2
Parents Educational level		
Illiterate	1	1.2
Literate	14	16.3
Basic	35	40.7
Secondary	28	32.6
College	3	3.5
University degree	5	5.8
Socioeconomic Status		
Insurance		
Public	3	3.5
Private	15	17.4
Both	2	2.3
None	66	76.7
Family Income		
High(>Rs100000/year)	13	15.1
Medium(Rs.75000-100000/year)	60	69.8
Low (< Rs.75000/years)	13	15.2
Habitant		
Big Town	7	8.1
Small Town	59	68.6
Village	20	23.3
No. of family member		
≤4	17	19.8
5-6	48	55.8
≥7	21	24.4
Parents perceived to health care system		
Good	14	16.3
Medium	62	72.1
Poor	10	11.6
Sources of information		
Doctor	80	93.0
Television	26	30.2
Radio	9	10.5
Newspaper	21	24.4
Friends	30	34.9
Family Relatives	12	14.0
Net	1	1.2
Facebook	7	8.13

TABLE 1. MEDICATIONS KNOWLEDGE.

Medications	Before Intervention		After Intervention	
	n	%	n	%
Antibiotics	71	82.6	15	17.4
Analgesic Antipyretic	79	91.9	7	8.1
Analgesics	79	91.9	7	8.1
Antihistamines	63	73.3	23	26.7
Normal Serum	9	10.5	77	89.5

TABLE 2. REASONS FOR GIVING THEIR CHILD ANTIBIOTICS WITHOUT PHYSICIAN'S ADVICE.

Reasons	Before (%)	After (%)
No money to visit physician		
Most of the times	21	1.2
Sometimes	37.0	2.3
Never	41.9	96.5
Child's conditions didn't seem serious enough		
Most of the times	16.3	0
Sometimes	24.4	5.9
Never	59.3	94.2
Knowledge of antibiotics for the same symptoms so self-prescribed		
Most of times	17.4	2.3
Sometimes	27.9	2.3
Never	54.7	95.3
Pharmacist recommended the antibiotic		
Most of the times	8.2	0
Sometimes	5.8	3.5
Never	86	96.5
Friend/ family relative recommended the antibiotic		
Most of the times	4.7	2.3
Sometimes	1.2	2.3
Never	94.2	95.3

TABLE 3. SCORES OF KNOWLEDGE ATTITUDE PRACTICES AND OVERALL.

Characteristic	Median Score	p-value
Attitude		
Before	20	
After	23	<0.001
Knowledge		
Before	13	
After	16	<0.001
Practices		
Before	19	
After	26	<0.001
Total		
Before	52	
After	65	<0.001

TABLE 5. SCORES AMONG DIFFERENT SUBGROUPS OF RESPONDENTS BEFORE AND AFTER INTERVENTION.

	Knowledge			Attitude			Practices			total		
	Initial	Intervention	p-value	Initial	Intervention	p-value	Initial	Intervention	p-value	before	after	p-value
Gender												
Male	47	39	0.27	47	45	2.47	50	41	0.29	51	41	0.02
Female	41	45		41	42	0.51	38	45	0.48	38	44	
Age in years												

≤ 20	40	66	0.20	27	42	0.64	46	67	0.16	38	61	0.24
21-30	42	44		43	45		38	44		40	45	
31-40	45	40		44	40		51	394		49	39	
Ethnicity												
Upper cast	47	48	0.23	44	44	0.81	45	46	0.84	46	47	0.87
Dalit	39	48		39	42		41	40		38	42	
Disadvantage janajati	39	41		44	46		44	43		43	44	
Relatively advantage janajati	44	34		48	37		48	39		42	25	
Religious minorities	47	50		56	57		56	56		53	53	
Parents												
Educational level												
Illiterate	50	16	0.91	56	22	0.88	1.5	38	0.16	23	27	0.86
Literate	38	43		38	41		34	41		35	41	
Primary	35	43		44	41		42	40		40	41	
Secondary	49	47		39	46		44	47		43	47	
High School	51	38		47	44		42	38		48	39	
Collage	78	398		67	57		65	28		77	44	