

Knowledge and Beliefs of School Children Towards Medicine in Karachi, Pakistan. A Cross-Sectional Study

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ABSTRACT

Background: Collaborative learning related to the perception of children towards medicines can assist students and parents in developing knowledge and learning in medicines. Various studies have shown that, medicine knowledge building is necessary for children as well as parents.

Objective: The objective of this study is to determine the Knowledge and beliefs of school children towards medicine in Karachi, Pakistan.

Methodology: Our study was cross sectional survey-based study; In this observational type of study, the investigator measures the exposure of the participants at the same time. For measuring the knowledge and beliefs different questions were asked from the students and after implementing different test including descriptive, cross bar and chi square test we found that our results have shown significance results i.e. 0.05 %. The knowledge was accessed on different dosage form and the experiences of the children. 10 questions were asked to assess the knowledge however for belief we asked 5 questions after pilot run on 30 children.

Results: Majority of children liked to take medication in form of syrup i.e. 95% and about 95% don't know about the effect and role of medication in the body. More than 90% of the children don't know about the cure, medicine and frequency of the medicine. Significant number of student/children state that they were forced to take medicines without any health care provider's consent. Significant population of children and their parents were lacking the basic knowledge regarding the use of medicines. Around 20% unwanted most common diseases spreading due to lack of knowledge, self-medication. With survey we also found that children have great fear of medicines i.e. 97%, parents forced their children to take medicines either after health care provider consent or self. This result is serious indication and alarming for parents and children with regard to their safety. More than 90% of the children have no beliefs on medication.

Conclusion: There is big gap between knowledge and beliefs of school going children towards medication. New education model can make situation better which leads towards less resistance in young population.

Keywords: knowledge, children, medicine, belief.

INTRODUCTION

The use of medicines has been increased by folds in young and old age peoples. The purpose of medicines is not limited to provide therapeutic activity but it is also used to prevent diseases as well [1]. The use of medicines in children especially in hospitals is always proceed under the supervision of hospital staff, and nurses. In general practice children do not understand the concept of medicine, why they are taking medicine? Therefore, to deal with this problem preventive measures are being taken. Short messages are being labeled on medicine packaging "Keep out of reach of children" messages like this are often seen on packaging [1]. Contrariwise, the children are heterogeneous group not only in age, race, colors, and intelligence but also on cognitive development. Young children tend to see the packaging with keen interest and often they look for the packaging with keen interest. Some studies have found that most of the children have no idea about medicines. They percept that medicines have bad effects it is harmful for their bodies. Older children do know more about medicines and they understand the risks and adverse effects of medicines more better than younger children [2].

The children in their academic age tend to see drugs carefully. Although age is a factor, children have variety of limited ideas about how drugs work and the drug's efficacy and adverse reaction of drugs are confusing to them. Indeed, children believe that drugs may have multiple side effects along with desirable therapeutic effects. Children of all periods and societies studied want to learn further about drugs. Autonomy in drug use is unexpectedly high and disturbing given that knowledge of drugs is poor [3]. At the concrete functional stage, cognitive thinking becomes more logical and methodological. Now the child is suitable to understand the link between the cause and effect and can view the same situation from different points. Still, allowing still concentrates on the present and the child is unfit to apply academic or abstract ways of thinking. The formal functional stage starts roughly when the child is 12 times and continues through majority. The child is suitable to suppose abstractly and to understand and formulate academic situations. Chronically ill children's comprehensions of drugs have been extensively studied, but healthy children less frequently still, information on healthy children and beliefs about drug use is demanded to be suitable to target health education [4]. A research study

shows that children are likely to take more interest in short, animated movies and advertisement than to read books. Whereas children's knowledge of medicines is superficial which is quite harmful as it can left very bad impact on other children's attitude and behavior about medicines [1]. Medicines can be taken for the betterment of health, but if children remain vulnerable to drug abuse or medicine incident it will be much difficult for parents to counsel them. Incidents like this will lead to mishap in children perception, as children according to their age perceive medicine based of physical appearance and form of drugs [2].

Resulting in limitations of medicine knowledge led to different problems. The most common problem we come across is the perception of children always leads to efficacy of drug. Several studies show that children assume that efficacy of drugs-medicines always depend on their shapes, size and taste. The bitter is the taste the more efficient drug will be. This is totally a wrong concept in children if not corrected on right time, it will affect the behavior of children in the later phase of their lives [2]. Moreover, one more highlight of the study is, children aged between 10-14 years start taking drugs without parent knowledge. It is unsafe activity among children this really need to be stopped. Multiple surveys and studies found that educating a parent is way more important than educating children [2]. It was found that most of the parents were unaware that their children take medicine from pharmacy without their knowledge [5-6]. Drug-related problems (DRPs) are common in children, but few studies describe them from the parents' perspective. In the present study we have designed a develop method to teach, guide parents related to drug-related problems [7]. The drug related problems in children have been commonly experienced and self-medication was noted which results in almost 20 most common diseases, including headache, dizziness, irregular episodes of seizures, irregular breath rate, nausea, vomiting, stomach upset, abdominal pain etc. [8]. However, some ADR were reported and other were not that comes into action lack of awareness of medicines [6, 9, 10]. The main objective of the study is to determine the concept of young children knowledge and beliefs about medicines and its effects.

METHODOLOGY

Our study was cross sectional survey-based study. The sample size has been calculated from the Cochran's formula for maximum precision with best

attribute of the population. The calculated sample size as per the population of Karachi were found out 385 on 95% on confidence interval. For maximize the results we took the confidence interval with 98% and calculated sample size was 543. For maintain the effectiveness of the result we targeted maximum number of individuals. In our study the completed filled form was 515 which were included in the study. Data were collected through randomized convenient sampling method. For collecting the data, a predesigned questionnaire was designed and pilot study were run about 30 children to check the understandability and acceptability of the questions. Inform consent and age of the children lied on the prime parameter of inclusion criteria. 7 to 17 were the age of children who willing were participated in the study. However, age bracket other than mentioned were considered to be the excluded and the one considered to be reluctant for consent to be comes in the exclusion criteria of the study. In the validated designed questions after demographics questions, 10

questions from different dosage form were asked to the study participants however 5 questions were included from the belief part.

RESULTS

After analysis of the results through descriptive statistics from SPSS version 27, it was found out that most of the children who have concepts but majorly no concept of health and medicines. In this study, the girl's population were about 33% and boy children participation were 66%. The study population were between middle of the children age and fall into the teen aging. About 46% were between 7 to 10 years of age, 33% were about 10 to 13 years of age and 19% were about 13 to 17 years of age. In these strata about 37% of the parents were health care professionals and 62% were other than health care professional. In our study highest number of parents were graduated from the study i.e. 45% however the education of the mother was about 42% in the category of upper secondary school as shown in table 1.

Table 1. Socio-demographic data of the children and their parents' characteristics.

Social-demographics information		N	Percentage
Gender	Male	345	66.99
	Female	170	33.009
Age of Respondents (Years)	7-10 years middle childhood	241	46.79
	10-13 years adolescence	174	33.78
	13-17 years *teenage	100	19.4
Parents' Job	Health Professionals	195	37.86
	Non-health Professionals	320	62.13
Education Level of Father	Upper Secondary School	120	23.3
	College	160	31.06
	University	235	45.63
Education Level of Mother	Upper Secondary School	220	42.71
	College	160	31.06
	University	135	26.21

Table 2. knowledge of different dosage foam towards medicine.

Questions	Which dosage form would you like to take?	N		N	
		No (%)	Yes (%)	Yes (%)	
Do you think medicine can be your friend?	syrup	228 (44.3%)	28 (5.4%)	18 (3.5%)	
	tablet	166 (32.2%)	1	0 (0.0%)	
	capsule	32 (6.2%)	1	0 (0.0%)	
	injection	42 (8.2%)	15 (2.9%)	25 (4.9%)	
Do you know how medicine work in your body?	syrup	228 (44.3%)	1	0 (0.0%)	
	tablet	173 (33.6%)	0 (0.0%)	15 (2.9%)	
	capsule	32 (6.2%)	0 (0.0%)	23 (4.5%)	
	injection	41 (8.0%)	5 (1.0%)	4 (0.8%)	
Do you know that each medicine has specific use and dose (Efficacy)?	syrup	228 (44.3%)	21 (4.1%)	17 (3.3%)	
	tablet	166 (32.2%)	7 (1.4%)	2 (0.4%)	
	capsule	32 (6.2%)	17 (3.3%)	21 (4.1%)	
	injection	42 (8.2%)	2 (0.4%)	7 (1.4%)	
Do you think, you can cure from illness without taking medicine?	syrup	228 (44.3%)	31 (6.0%)	12 (2.3%)	
	tablet	166 (32.2%)	3 (0.6%)	1 (0.2%)	
	capsule	32 (6.2%)	21 (4.1%)	17 (3.3%)	
	injection	42 (8.2%)	7 (1.4%)	2 (0.4%)	
Do you know the consequences of skipping a dose?	syrup	228 (44.3%)	12 (2.3%)	3 (0.6%)	
	tablet	166 (32.2%)	1 (0.2%)	21 (4.1%)	
	capsule	32 (6.2%)	21 (4.1%)	17 (3.3%)	
	injection	42 (8.2%)	7 (1.4%)	2 (0.4%)	
Do you know you can only take medicine when you are sick?	syrup	228 (44.3%)	17 (3.3%)	13 (2.5%)	
	tablet	166 (32.2%)	9 (1.7%)	2 (0.4%)	
	capsule	32 (6.2%)	17 (3.3%)	7 (1.4%)	
	injection	42 (8.2%)	2 (0.4%)	2 (0.4%)	
Do you know taking medicine without specific illness is harmful for your body?	syrup	228 (44.3%)	17 (3.3%)	13 (2.5%)	
	tablet	166 (32.2%)	9 (1.7%)	8 (1.6%)	
	capsule	32 (6.2%)	17 (3.3%)	3 (0.6%)	
	injection	42 (8.2%)	2 (0.4%)	14 (2.7%)	
Do you know medicine helps you in killing germs like bacteria and virus?	syrup	228 (44.3%)	13 (2.5%)	8 (1.6%)	
	tablet	173 (33.6%)	9 (1.7%)	3 (0.6%)	
	capsule	32 (6.2%)	17 (3.3%)	13 (2.5%)	
	injection	41 (8.0%)	2 (0.4%)	8 (1.6%)	
Do you know medicine boosts your immune system (Army of the body)?	syrup	228 (44.3%)	14 (2.7%)	13 (2.5%)	
	tablet	173 (33.6%)	8 (1.6%)	8 (1.6%)	
	capsule	32 (6.2%)	3 (0.6%)	6 (1.2%)	
	injection	41 (8.0%)	6 (1.2%)		
Do you know that medicine must be kept in optimum temperature?	syrup	228 (44.3%)	14 (2.7%)	13 (2.5%)	
	tablet	173 (33.6%)	8 (1.6%)	8 (1.6%)	
	capsule	32 (6.2%)	3 (0.6%)	6 (1.2%)	
	injection	41 (8.0%)	6 (1.2%)		

Table 3: Beliefs of different dosage foam towards medicine.

Questions	Which dosage form would you like to take?	Yes (%)		N (%)	
Do you ever refused (not obeyed) to take medicine when you were sick?	syrup	233	(45.2%)	18	(3.5%)
	tablet	167	(32.4%)	17	(3.3%)
	capsule	32	(6.2%)	1	(0.2%)
	injection	46	(8.9%)	1	(0.2%)
Do you always depend on your parents when taking medication?	syrup	233	(45.2%)	17	(3.3%)
	tablet	167	(32.4%)	1	(0.2%)
	capsule	32	(6.2%)	1	(0.2%)
	injection	46	(8.9%)	18	(3.5%)
Did you ever buy over-the-counter medicine at a pharmacy without the knowledge of parents, do your belief this act count be dangerous?	syrup	233(45.2%)		19(3.7%)	
	tablet	167(32.4%)		15(2.9%)	
	capsule	32(6.2%)		2(0.4%)	
	injection	46(8.9%)		1(0.2%)	
Do you belief that medicine is always harmful?	syrup	233	(45.2%)	19	(3.7%)
	tablet	167	(32.4%)	15	(2.9%)
	capsule	32	(6.2%)	2	(0.4%)
	injection	46	(8.9%)	1	(0.2%)
Does the medicine's color captivate you?	syrup	233	(45.2%)	20	(3.9%)
	tablet	167	(32.4%)	13	(2.5%)
	capsule	32	(6.2%)	1	(0.2%)
	injection	46	(8.9%)	3	(0.6%)

Upon asking multiple questions related to the knowledge, most of the study participants have not yet knowledgeable about medicine dosage form. Each dosage foam has different responses on the same question. Like in question no 1 majority of the population have response that medicine is not our friend i.e. 44% in syrup dosage for, however 32% and 6.2% were tablets and capsules. In the early to mid-teens, most of the study population i.e. 44% were unaware about the medicine mechanism and its action in the body and same questions have different responses like 0.7% in injections and 6.2 % in capsules as shown in table 2. Upon asking questions related to the knowledge, it can be gauged that our children and mid-teens were less aware about medicine and its action inside in the body.

Upon asking different questions on beliefs, it was found out that children have a belief that without medicine they can be well and cured i.e. 45.2% and only 18% were said no to this specific question. In the early teens, study participants were still depending on their parents i.e. 45.2 on syrup and 8.9% on injections.

Participants said we bought prescription over the counter, most of them said yes, its dangerous to bought prescription over the counter i.e. 45%. On asking question about harmfulness of the medication, it was found out that majority of population said yes on the question i.e. 45.6% and only 3.7 said no on that. However different dosage foam has different options as shown in table 3.

DISCUSSION

The findings regarding the children knowledge about medicines shows that majority of students fear from medicines. The basic concept of medication and wellness has missed. The role of the parents and teacher can play crucial role on this. Children and teenage would be the building block of any nation. If your upcoming youth have lack of basic knowledge, how would they accept can change in future in any next upcoming pandemic [11]. It can be seeming that parent's knowledge can be best reflected in their children [12-14].

Children perception build by looking at the physical appearance of medicines itself [1,5,15]. Children tend to attract more on colorful packing and form of medicine [16]. From findings of our research study found that children have no idea about the efficacy of medicine and how they work inside our body. Majority of children miss out on optimum temperature they do not even know about optimum temperature for medicine. To overcome this problems seminar should be arranged for parents and booklet (sketch books) should be provided in hospitals to spread word how medicine work in our body.

Children are supposed to fill color in books with assistance of parents to build strong and powerful healthy nation. Booklets will be designed in a way that children who have not been in school can also get full benefits. Booklet will also contain product description, uses, contraindications and side effects on the last page in form of bullets so that parents can easily read and understand the concept of medicine and mechanism of action in the form of pictures in every basic language. Many studies evidently shows the effort on parents on children wellbeing can create good impact on health and sleep at night [17,18]. The results of other studies also strengthen these findings that majority of children believe that color, taste, and size of medicine affect the efficacy.

As nation, we always far behind to chase the millennium development goals either its for polio or tuberculosis. If we work on education, specificity medicine mechanism and its importance from the stretch in schools till primary language in every local language or either through pictures. The concept can be embedded in the mind of young. Misconceptions occurs always with less education or incomplete education.

CONCLUSION

Significant population of children and their parents were lacking the basic knowledge regarding the use of medicines. Around 20 unwanted most common diseases spreading due to lack of knowledge and self-medication.

With all efforts we still far behind to chase the goals of millennium development goals for the last 10 years. Strategically if we work on education of children and their parents, we can get rid any of the situation. With survey we also found that children have great fear of medicines, parents forced their children to take

medicines either after health care provider consent or self. This result is serious indication and alarming for parents and children with regard of their safety and future wellbeing.

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