Assessment of Caregivers' Knowledge about Medications and Medical Conditions by Time of Discharge in the Paediatric Department at University Teaching Hospital of Zambia

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ABSTRACT

Background: Discharge is a period of transition from hospital to home that transfers responsibilities from the inpatient health care providers to patients and primary Caregivers. The study assessed Caregivers' Knowledge about medications and medical conditions by the time their paediatric patients are discharged.

Methods: A Cross-Sectional Study was carried out at University Teaching Hospital, paediatric department in Lusaka city of Zambia. A total of 369 caregivers were assessed on the level of knowledge about their discharged paediatric patients' medical conditions and medications using data collected by a Pre-Tested Interview administered questionnaire. A knowledge index was developed, representing the number of correct answers. Chi-square test analysis was used to indicate the significance of the results.

Results: Most Caregivers were married (78.8%),Parents (82.2%), Unemployed(57.7%) with Primary level of Education (45.5%).The study found that 35.5% were very knowledgeable,27.6% had average knowledge, and 36.9 % were not knowledgeable about Medical conditions. 16.5% were very knowledgeable,35.5% were averagely knowledgeable, and 48.5 were not knowledgeable about Medications. The overall knowledge about Medical condition and Medications was poor, with only 11.9% very knowledgeable,35.5% average knowledgeable and 52.6% not knowledgeable. Study of Pearson Chi-square reviewed that there is a statistically significant association between Age(P=0.000), Gender(P=0.023), Duration of Hospital stay(0.000), of education (0.000), Occupation (0.000) and Relationship of Caregiver (0.002) to the level of knowledge.

Discussion: Generally, Caregivers were not knowledgeable about Medical conditions and Medications of their paediatric patients. However, the study findings indicated that Caregivers were more knowledgeable about medical conditions than medications. Female parent caregivers are more likely to be knowledgeable than male Caregivers. Similarly, those who stay longer in hospital, with a high level of education, and health workers are likely to be knowledgeable.

Keywords: Caregiver; Discharge; Medications; Medical counselling; Medical condition

INTRODUCTION

Discharge is the release of a patient who has stayed at least one night in the hospital and either returns home or is transferred to another facility. Among the most significant challenges for the family, Caregivers is interacting with nurses and other professionals in the hospital setting, and a rough crossing back home, as the patient, is "discharged to family [1].

Family Caregivers often feel unprepared to provide care, have inadequate knowledge to deliver proper care, and receive little guidance from the formal health care providers. Nurses and family Caregivers rarely agree about specific needs or problems during hospital admission or discharge [2]. 30 to 40 % of patients discharged to their homes lack knowledge of medication use and need more specified directions for care, such as how or

when to take medications [3], [4]. Prescription medications are commonly altered at the discharge point, with patients asked to discontinue some medications, switch to a new dosage schedule of others, or begin new treatments [5].

The most common way to evaluate patient education is to estimate their knowledge and understanding of their medication therapy [6]. However, in paediatric patients assessing caregivers' understanding can do this.

The quality of interpersonal interaction with parents about the activities associated with Emergency Departments (E.D.s) visit has also been shown to be essential for overall satisfaction. Furthermore, lack of standards and considerable variation in practice regarding discharge instruction in E.D.s poses a quality and safety risk for children and Parents/Caregivers [7]. This study assessed caregivers' knowledge of medications and medical conditions by time of discharge. This can help in coming up with counselling guidelines.

The prevailing paediatric Caregivers' knowledge of medications and medical conditions by discharge at University Teaching Hospital in Lusaka is not available in the literature. However, studies from other places have described gaps in continuity of care as patients get discharged from the hospital. An important part of drug-related problems originates from gaps in the continuity of care [8]. Further studies have documented Drug Related Problems (DRPs) such as non-compliance, lack of knowledge about the medication, adverse drug events, drug interactions, dosage problems, and practical problems to occur post-discharge [9], [10], [11], [12].

A cross-sectional survey which was done in Israel, by [13] on the question; " what do discharged patients know about their medications?" About 341 patients were interviewed 7-14 days after discharge. Most patients (73%) were aware of the medication course and purpose. However, they were unaware of side effects, needed lifestyle modifications and correct medication schedules. A large difference was found between levels of reported and correct knowledge about various issues regarding medication treatment. No significant correlation was found between correct knowledge about medication therapy at discharge, gender, age, education, patient satisfaction, and wish for more counselling. The only factor, which significantly affected correct knowledge levels, was whether the patient had received medication counselling during hospitalisation.

Another cross-sectional study conducted in Delhi, India evaluated Knowledge, Attitude and Perception of Caregivers of Children with Epilepsy. They observed that common people have a lack of knowledge, negative attitude, and wrong perception about the illness and the parents and Caregivers who are in touch with clinicians. Many Caregivers (about 67%) use to inform the school teacher, that their child is suffering from fits and around 30% felt that their child could not lead a normal life. Regarding the cause of illness, 26% of caregivers considered it madness, 21% considered it as a hereditary illness. Regarding the treatment of illness, 6% felt that it is not treatable, 25% of Caregivers reported that they did not know that their children had epilepsy though they were carrying the treatment [14].

In Trinidad and Tobago, a cross-sectional study was carried out to determine the antibiotic knowledge of children's Caregivers and the influence of this knowledge on their beliefs and use of these agents for URTIs in children under their care. It was found that high school education and higher socioeconomic status was significantly associated with higher knowledge scores [15].

This study was aimed at assessing paediatric patients Caregivers' level of knowledge about medications and medical conditions at the time of discharge and determine the association of age, duration of hospital stay, education level, gender, marital status, occupation and relationship of paediatric patients to Caregivers and their level of knowledge about medications and medical conditions.

MATERIALS AND METHODS

A Cross-sectional study involving assessment of paediatric patients Caregivers' knowledge about Medications and Medical conditions by time of discharge was carried out at University Teaching Hospital, paediatric department in Lusaka. The assessment was done through the analysis of data that was collected at the time of discharge.

The sample size was calculated using the prevalence of 40% [3], at a confidence level of 95% and a marginal error of 5%. A consented 369 Caregivers for discharged paediatric patients at University Teaching Hospital were sampled using a systematic random sampling method.

This was instituted by interviewing every sixth pediatric patients' caregiver who presented with a prescription and a discharge slip at the pharmacy during the regular working hours.

Caregivers for patients who had been admitted for more than 24hrs and who were willing to participate in the study were interviewed while those for patients admitted for less than 24 hours and not willing to participate were excluded from the study. Communication barriers, which resulted in an inability to complete the questionnaire, also resulted in excluding the study participants.

Permission to do the study at the Institution was asked from the Managing Director of the Institution, and Clearance for the proceedings of the study was obtained from the University of Zambia Biomedical Research Ethics Committee (UNZABREC).

Data were analysed using Statistical Package for Social Sciences (SPSS) software version 22.

A knowledge index representing the number of correct answers a Caregiver was to give regarding medical condition and medications was developed. The correct answer was scored 1and incorrect zero. A maximum total score of 15 points was given on the overall knowledge about medications and medical conditions.

Variables for measurement were defined, scaled and univariate analysed. For categorical variables, data were expressed as numbers, percentages and frequency distributions. Inferential Analysis involved associations of variables and Chi-square test analysis was used to indicate the significance of the results.

RESULTS

The frequency distributions among the studied Independent variables, i.e. Age, Gender, Education level, Duration of Hospital Stay, Marital status, Occupation and Relationship of Caregivers with the patient were indicated in *Table one.*

The study found that most paediatric Caregivers interviewed were Females. The evidence is that out of 369 participants, 351 (95.5%) were female. The study also found that the majority of participants were in the age group 26-35 years,174 (47.2%) participants were in this age group. Further, the study has shown that the majority of admitted children spent about one to three days in the hospital. Frequency distributions among the studied. Dependent variables, i.e. knowledge about medical conditions and Medications, were as indicated in *Table one.*

The overall knowledge about the medical condition and medications was11.9% very knowledgeable, 35.5% average knowledgeable and 52.6% not knowledgeable.

The P-value of the studied Variables (through Study of Pearson Chi-square) for the association of Age(P=0.000), Gender(P=0.023), Duration of Admission(P=0.000), Level of Education (P=0.000), Marital status (P=0.72), Occupation (P=0.000) and Relationship of Caregiver(P=0.002) to the level of knowledge were indicated in *Table two*.

DISCUSION AND CONCLUSIONS

This study found that Caregivers were more knowledgeable about medical conditions of their patients than Medications. The evidence is that concerning knowledge about Medical conditions 35.5% were very knowledgeable, 27.6% had average knowledge, and 36.9 % were not knowledgeable whereas 16.5% were very knowledgeable, 35.5% were averagely knowledgeable, and 48.5% were not knowledgeable about Medications. Few caregivers (35.5%) had knowledge about a specific medical condition, i.e. knowing the medical condition's name, which led to the admission of their patients. They also exhibited basic knowledge about the causes, mode of transmission, if curable or not curable conditions like sickle cell anaemia and HIV infection. Caregivers explained how some medical conditions could come about and give correct expectations of their patient's possibility of completely getting healed. Caregivers have correct knowledge about therapy duration after discharge from the hospital and know how long their patients have to stay on treatment after discharge.

However, despite a few caregivers being knowledgeable about medical conditions, very few were knowledgeable about lifestyle changes or tests required, including preventive measures for some common medical conditions. Caregivers are not talked to on how they can prevent their patient from having a similar condition in the future or prevent further readmissions due to the same medical condition.

Caregivers had less knowledge about a specific medication on discharge than knowledge about a medical condition which led to their patient's

admission. Very few caregivers knew the names of medications and the purpose of medication their patients had been given. A good number of caregivers well understands reconstitution of medications dispersed in powdered or concentrated liquid forms; they can explain how to prepare the medications correctly before giving their discharged patients, however very few know how long prepared medications should be kept before disposal and in what environment/conditions to keep the medications during their use. Most caregivers use a teaspoon as a measurement tool most of the time at home to give their patient liquid medicine, if the given medicines bottle has no calibrated measuring cup.

The Schedule for taking the medication, i.e. how often to give the medications to the patient and how long to give medications to the patient, is well understood by many caregivers. In contrast, many caregivers are not aware of possible side effects that medications can cause and do not know what to do if their patient development any side effect during treatment. Similarly, for some medications, tests needed and lifestyle changes required (e.g. special diet, increased or decreased fluid intake, before or after meals and decreased exposure to sunlight) are not well understood.

Study of Pearson Chi-square reviewed that there is a statistically significant association between Age (P=0.000), Gender (P=0.023), Duration of Hospital stay (P=0.000), Level of Education (P=0.000), Occupation (P=0.000), Relationship of Caregiver (P= 0.002) and Counselling of Caregivers (P=0.000) to the level of knowledge. However, there is no statistically significant association between caregiver's marital status and the level of knowledge (P=0.72). [13] Found no significant correlation between correct knowledge at discharge and Gender, Age, Education but similar to this study, medication counselling during hospitalisation significantly affected levels of correct knowledge. The difference could be due to the lowest level of education included in this study, i.e. Caregivers who have not been to any formal school.

Female parent caregivers are more likely to be knowledgeable than male Caregivers. Similarly, those who stay longer in hospital, with a high level of education, and health workers are likely to be knowledgeable.

Caregivers are not knowledgeable about medical conditions and medications of their paediatric patients by time of discharge. However, the study findings indicate that caregivers are more knowledgeable about medical conditions than medications. Age, duration of hospital stay, education level, gender, occupation, relationship, and counselling of caregivers to the patient affect caregivers' knowledge while the caregiver's marital status does not affect. Medical counselling offered to paediatric caregivers during hospitalisation and at time of discharge is not documented in the patient file. Additionally, caregivers are not given pharmacy discharge slip notes. Comprehensive medical counselling should be integrated into routine health care services provided to Caregivers from time of admission to discharge of their paediatric patient. Guidelines on medical counselling of Caregivers should be provided to health practitioners.

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TABLES

***Table 1**; Frequencies of the studied variables.*

VARIABLE	CATEGORIES	FREQUENCY	PERCENTAGES(%)
Age	15-25 years	116	31.4
	26-35 years	174	47.2
	36-45 years	50	13.6
	46-55 years	25	6.8
	> 55 years	4	1.1
Gender	Female	351	95.12
	Male	18	4.8
Education Level	Non.	31	8.4
	Primary.	168	45.5
	Secondary.	117	31.7
	Tertiary/University.	53	14.4
Duration of Hospital Stay	24hrs - 3 days	124	33.6
	Four days - 5 days	122	33.1
	6days - 7 days	83	22.5
	8days - 14 day	11	3.0
	>14 days	29	7.9
Marital Status	Single	70	19.0
	Married	291	78.8
	Divorced	8	2.2
	Widowed	0	0.0
Occupation	Unemployed	213	57.7
	Business	112	30.4
	Student	9	2.4
	Education	10	2.7
	Defence Administration	6	1.6
	Health	15	4.1
		4	1.1
Relationship	Parents	307	83.2
	Grandparents	21	5.7
	Siblings	11	3.0
	Extended member	27	7.3
	Friend	3	0.8
Counselling offered	Caregivers Counselled	58	15.7
	Caregivers not Counselled	311	84.3

Table 2; P-Value for the studied variable.

Variable	P-value	Significance of association
Age	0.000	Significant
Gender	0.023	Significant
Duration of Admission	0.000	Significant
Level of Education	0.000	Significant
Marital Status	0.720	Not Significant
Occupation	0.000	Significant
Relationship	0.002	Significant
Counselling Offered	0.000	Significant