



Comprehension and compliance with discharge instructions among pediatric caregivers

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ABSTRACT

Background: Good comprehension and compliance with the discharge instructions are vital to the patient for effective care of their own health at home. This study planned to assess the prevalence of non-comprehension and non-compliance with discharge instructions among caregivers of pediatric patients.

Methods: A cross-sectional study was conducted in the pediatric department of Christian Medical College & Hospital, Punjab, India, from January 2022 to May 2022. For assessment of comprehension, a face-to-face interview was conducted with caregivers at the time of discharge from the hospital, and compliance was assessed while the patient appeared for a follow-up visit. English/Hindi or Punjabi speaking primary caregivers of children aged ≤ 12 years and discharged from the hospital with more than 1 medication were eligible to include in this study.

Results: A total of 100 caregivers of pediatric patients were recruited in the study. The majority of patients (62%) were females. The mean (\pm SD) age of patients was 4.6 (\pm 5.5) years and the mean (\pm SD) age of caregivers were 32 (\pm 6.4) years. The majority (78%) of caregivers were mothers. The prevalence of non-comprehension for medications, diet and follow-up plans were 27%, 9.3%, and 4% respectively, while the prevalence of non-compliance with medications, diet, and follow-up plans were 70%, 15%, and 14% respectively.

Conclusion: Non-comprehension and non-compliance with discharge instruction was prevalent among caregivers of pediatric patients. Various measures need to be taken by healthcare professionals to improve comprehension and compliance among caregivers.

1. Introduction

Discharge instructions are recommendations given to the patients after being discharged in order to cope with any remaining illness that needs to be handled by the patient at home. Upon discharge, a nurse or clinician presents and explains the discharge instruction to the patient or their family members in lay language. Discharge instructions mainly consisted of four sections. The first section consists of diagnosis that includes the main diagnosis, complications of the disease, and subsidiary diagnosis. The second section contains the list of medications including posology and treatment duration. The third and fourth section is about diet and follows up recommendation respectively.¹

Precise discharge instructions should be given to the patient or their caretaker in order to decrease hospital readmission and improve patient care and safety.² Patients are more likely to comply with the prescribed

drug and follow-up appointments if they have a better understanding of their discharge instructions.³ Unfortunately, studies have reported that patient comprehension of diagnosis, treatment, and follow-up plans is poor.^{2,3} Indeed, understanding, recalling, and executing the complex discharge instruction is very difficult for the patient or their family members. They may experience physical and emotional distress while being discharged from the hospital. Besides, remain hurried to leave and may not be listening to the discharge instruction attentively. Patient literacy level may further affect their understanding.⁴

Management of discharge instruction in pediatric patients poses special challenges compared to adults, as children often refuse to take medicines, vomit out the medicine, and need liquid formulations. Besides, the complexity of discharge instruction, comorbidities, and education level of caregivers may further increase the risk of non-comprehension and noncompliance. Noncompliance with medication

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can lead to poor treatment outcomes, including rehospitalization, worsening of medical conditions, increased treatment costs, and even death.⁵⁻⁷ Studies have reported that most caregivers were often unable to remember the medication name,^{8,9} frequency,^{8,10} duration,^{10,11} the adverse effect,⁸ and indication¹² provided in the discharge plan. A high rate of medication noncompliance was also reported among them.¹² Moreover, approximately 40% of caregivers have done dosing errors in liquid oral formulation.^{8,13} To the best of our knowledge, no study has addressed the comprehension and compliance of discharge instruction among the caregiver of pediatric patients in India. The results of this study will be helpful to design appropriate interventions for the discharge plan management of pediatric patients. Caregiver of pediatric patients plays an important role in understanding the different elements of discharge instruction. We, therefore, aimed to assess the prevalence of comprehension and compliance with the discharge summary among caretakers of pediatric patients admitted to the hospital.

2. Methodology

2.1. Study design and setting

This was an observational, cross-sectional study of parents of pediatric inpatients at Christian medical college & hospital (CMC) Ludhiana, in the state of Punjab, India. This study was conducted from the period of Jan 2022 to May 2022.

2.2. Eligibility criteria

English/Hindi or Punjabi speaking parents or primary caregivers of children aged ≤ 12 years, discharged from the hospital with more than 1 medication were eligible for the study. We included only one parent who claimed to be the primary caregiver of the child. Caregivers having a hearing or visual impairment were excluded from the study. Caregivers

who were not willing to sign the informed consent form and attended the outpatient pediatric department were also excluded from the study.

2.3. Assessment of comprehension

A total of 125 participants were screened, out of which 100 participants were able to meet inclusion criteria and 25 refused to participate in the study. Details study flow diagram is presented in Fig. 1. For assessment of comprehension, a face to face interview with caregivers were conducted at the time of discharge from the hospital. To determine the comprehension, caregivers were asked: 1) If any new medication was prescribed to the patient, and 2) If any special instructions such as frequency, dose, and duration of medications administration were provided to the patient. Responses were recorded in yes or no. Parents who accurately answered both questions were observed 'comprehend' the medication plan and a single inappropriate answer stipulated non-comprehend to the medication plan. Comprehension to the follow-up visit was assessed by asking parents: any follow-up plan was given to your child and the date of follow-up appointment. Responses were recorded in yes or no. An appropriate answer regarding the follow-up plans indicated comprehension. To examine their understanding of diet recommendations, caregivers were asked about dietary instructions provided at the discharge instruction. The response was recorded as yes or no. The incorrect answer reflects non-comprehension of dietary instruction. The printed discharge instructions were used to compare the responses. Caregivers were not assessed for the domain in which they did not receive instructions.

2.4. Assessment of compliance

A face-to-face interview was conducted during the follow-up visit to assess compliance among caregivers. At the time of discharge, parents were informed to bring all the medications to their follow-up visit.

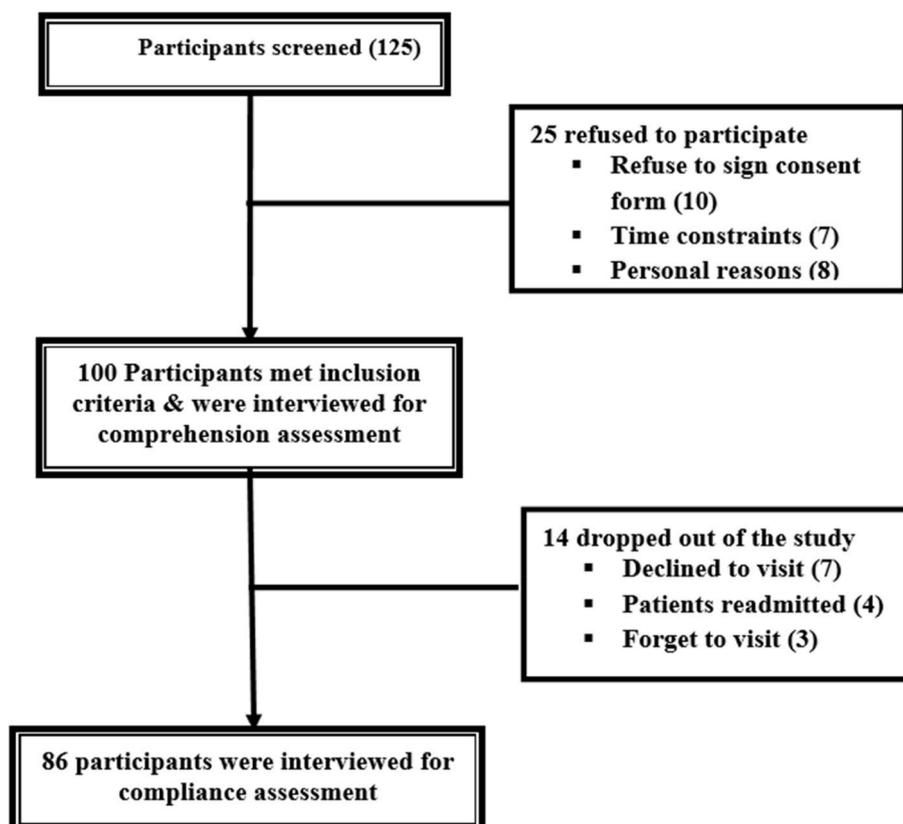


Fig. 1. Study flow diagram.

Parents were asked to name the medication they were giving and describe how they were giving it to their child including the frequency and duration of administration. Responses were documented and compared with the instructions given on the discharge summary. If any medication omission, dosing, or frequency discrepancies were reported then participants were considered non-compliant with medication instructions. Parents who attended follow-up appointments on the specific date ± 2 days were considered compliant with the follow-up plan. Compliance was not assessed for the patients who were readmitted before the follow-up visit. Patients were considered compliant with diet recommendations if parents had provided the recommended diet on regular basis after discharge.

2.5. Sample size

No formal sample calculation was performed. However, we planned to recruit 100 patients in this study. The sample size included in this study seems to be adequate for providing a lead toward the comprehension and compliance of the discharge summary.

2.6. Ethical consideration

The approval for the study was taken from the Institutional Ethics Committee of Christian Medical College & Hospital, Ludhiana. [Ref no: BMHR-IECCMCL/0322-129/Approvl-R.Project/LPU-Paeds]. Written informed consent was taken from the parents.

2.7. Data analysis

IBM Statistical Package for Social Sciences (SPSS) version 16.0 was used for the analysis of data. Means and standard deviations were calculated by descriptive analysis for continuous variables and categorical variables (frequencies with percentages).

3. Results

The majority of patients were females (62%). The mean (\pm SD) age of patients was 4.6 (\pm 5.5) years and the mean (\pm SD) age of caregivers of patients was 32 (\pm 6.4) years. The mean length of hospital stay was 5.29 days. The majority of patients' caregivers were mothers 78 (78%). Most participants (79%) were urban residents. The majority of the caregivers (20%) were graduates. The details socio-demographic characteristics of the participants were presented in Table 1. All 100 patients received instructions for medication and follow-up, and 96 patients received diet instructions. Prevalence of non-comprehension was found among 27%, 9.3%, and 4% of respondents in medications, diet recommendations, and follow-up appointments respectively. The prevalence of non-comprehension of the discharge instruction is documented in Table 2. A total of 86 patients appeared for a follow-up visit of which 84 had diet recommendations in the discharge instruction. Fifteen patients (17.8%) did not follow the recommended diet, 14(14%) did not turn up for follow-up appointments, and 70 (81.4%) patients did not take medication as per the instruction. Thus, the prevalence of non-compliance was found to be 17.8% for diet, 14% for follow-up appointments, and 81.4% for medications. Medication omission was the most common discrepancy observed among 34.8% of patients. Prevalence of diet, follow up and medication non-compliance was reported in Table 3.

4. Discussion

The prevalence of non-comprehension of the discharge instructions among the caregivers of pediatric patients varied by domain. We found that majority of caregivers were aware of diet recommendations and follow-up appointments. However, the highest rate of knowledge deficits was found in the medication category. Medicine plays an important role in the cure of diseases, and the improvement of health. An accurate

Table 1
Sociodemographic characteristics of the respondents.

Socio-demographic variable	Number (%)
Mean (\pm SD) age of the patient (year)	4.6 \pm 5.5
Mean (\pm SD) age of caregiver (year)	32 \pm 6.4
Gender of patient	
Male	38(38)
Female	62(62)
Mean (\pm SD) length of hospital stays (days)	5.29 \pm 2.9
Caregiver of patients	
Father	21(21)
Mother	78(78)
Grandparents	1(1)
Residence of patients	
Urban	79(79)
Rural	21(21)
Marital Status of caregiver	
Divorced	0(0)
Non divorced	100(100)
Monthly household income (INR)	
10000-20000	43(43)
20000-40000	31(31)
40000-60000	24(24)
>60,000	2(2)
Educational status of caregiver	
Illiterate	4(4)
Primary	17(17)
10th	11(11)
12th	40(40)
Graduate	20(20)
Postgraduate	8(8)

Table 2
Prevalence of non-comprehension with the discharge instructions.

Domain	Instruction given (%)	Non-comprehension (%)
Medication	100(100)	27(27)
Diet recommendation	96(96)	9(9.3)
Follow up appointments	100(100)	4(4)

Table 3
Prevalence of diet, follow-up, and medication non-compliance with discharge instructions.

Domains	Non-compliance (%)
Diet recommendation	15(17.8)
Follow up appointments	14(14)
Medication	70(81.4)
Medication omission	30(34.8)
Dosing discrepancies	18(20.9)
Frequency discrepancies	22(25.6)

understanding of medicines, their usage, frequency, doses, and duration is vital for achieving the desired therapeutic goal and preventing adverse outcomes. Thus, good comprehension of medication decreases the chances of adverse drug reactions, and medication error, and provides faster recovery. In the present study, about one-tenth of caregivers did not follow the recommended diet. A diet is also very essential for rapid recovery of disease along with medications, a healthy diet provides all nutrients that are needed to boost the immune system to fight against diseases. A non-comprehension regarding follow-up appointments was noticed in the least proportion of respondents. Timely follow-up is important to ensure that patient continues the prescribed medications and undergoes all laboratory investigations after hospitalization. Moreover, parents can also discuss the adverse drug reactions if any occur during the course of treatment. Hence, adequate knowledge of follow-up plans can help in the early mitigation of any complications that occur after discharge.

The current finding revealed that the majority of participants had

non-comprehensiveness in the medication, 9% had non-comprehension of diet recommendations and about 4% of caregivers had difficulty understanding follow-up plans in discharge instructions. The lack of a uniform method of assessment of comprehension and compliance with discharge instruction together with a limited number of available research makes the comparison difficult with previous studies. Due to growing concern on discharge summary, there is an urgent need for a uniform standard measurement technique. A study from the US revealed that 27% of adult patients had a lack of comprehension of medication and non-comprehension on diet recommendations, and follow-up was 50% and 5% of patients respectively.² Similar to our study in another study nearly 67% of respondents do not have an accurate understanding of the medication.¹² Parental comprehension and adherence can be enhanced by the utilization of health literacy informed strategies for instance teach-back method, pictographs, and dose demonstration.¹² Teach back method can be utilized as a key strategy in helping a caregiver to understand discharge instructions effectively and to prevent adverse events at home after discharge. Educational sessions and video discharge instructions can also be tried to improve comprehension among caregivers.¹⁴

A majority of caregivers (70%) in our study did not adhere completely to the medication instructions given in their discharge instructions. A study conducted in New York revealed a 38% non-compliance rate among the pediatric population, which is quite low when compared to our study.⁴ Another study among elder patients revealed that a significant proportion of patients did not follow their medication at home.¹⁵ A study conducted by Albrecht et al. illustrated that a significant proportion of older patients did not adhere to discharge instructions.¹ Medication non-adherence is a major concern for patients as it leads to poor treatment outcomes and increases morbidity and mortality. Moreover, it also increases healthcare costs and enhances the utilization of healthcare resources. In this study, about 18% of caregivers did not follow the discharge instruction. The various strategies such as educational intervention by health care providers and simplifying dosing schedules can be done to improve the adherence rate among caregivers.^{16,17} Innovative approaches can also be implemented in this area with joint efforts of caregivers and health care providers for enhancement of comprehension and compliance with discharge instruction.

5. Conclusion

Non-comprehension and non-compliance with discharge instructions were observed among the pediatric caregivers. Strategies need to be formulated by the healthcare professional to improve comprehension and compliance among caregivers. Moreover, future research with a higher sample size using multiple centers can be done to assess the understanding and adherence rate of discharge instructions among the pediatric population.

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Consent for publication

All the authors mutually agree to submit the manuscript for publication.

Declaration of competing interest

The authors declare no conflict of interest exists.

Availability of data and materials

The authors declare that the data regarding this manuscript can be accessed on reasonable request.

Authors contribution

Concept and design, BP, GK, KM; wrote the proposal, participated in data collection, SD and SK; Analyzed the data, drafted the paper, and prepared the manuscript, SD, SK; Approved the proposal with few revisions, GK, KM. All the authors read and approved the final manuscript.

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