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Caregiver Discharge Readiness and Expectations After Pediatric Laparotomy: A Mixed-Method Analysis

Kalaimani Thangamani[1], Shankar Shanmugam Rajendran[2], Vanitha Narayanasamy Naidu[4], Velmurugan[3], Vijayalakshmi Sathish Kumar[5], Sowmiya Bellora Benedict[6], Siva Ragavan[7]

[1,5,6,7]Post Graduate Nurse,[2] Principal, [4] Lecturer,
[1,2,3,5,6,7]College of Nursing, Madras Medical College, The TN Dr MGR Medical University, Chennai, Tamil Nadu, India.
[3] Professor, Department of Pediatric Surgery, Institute of Child Health and Hospital for Children, Egmore, Chennai.

Abstract

Safe discharge after pediatric laparotomy depends not only on surgical recovery but also on whether caregivers feel prepared to continue care at home. This mixed-methods study assessed hospital discharge readiness and explored discharge expectations among caregivers of children who underwent laparotomy at the Institute of Child Health, Chennai. An explanatory sequential design was used. In the quantitative phase, 60 caregivers of children aged 1-12 years who were eligible for discharge or had been discharged within 48 hours were selected via convenience sampling. Data were collected using sociodemographic and clinical proformas and the Readiness for Hospital Discharge Scale - Parent Version. In the qualitative phase, six caregivers were selected purposively and interviewed using a semi-structured guide. Descriptive statistics, chi-square testing, and thematic analysis were applied. Most caregivers were mothers (75.00%), female (76.67%), and aged 26-30 years (61.67%). Abdominal surgery was the commonest procedure (95.00%); 40 children (66.67%) stayed 1-3 days, and no postoperative complications were reported. The mean readiness score was 43.37 +/- 9.98 out of 80 (54.21%). Readiness was moderate in 56.67%, low in 33.33%, and high in 10.00% of caregivers. Significant associations were observed with caregiver age, gender, previous discharge experience, and hospital stay duration. Qualitative themes showed that caregivers valued family support and hospital guidance but needed emergency contact numbers, written medication schedules, wound-care demonstrations, diet charts, and emotional reassurance. Structured, family-centered discharge teaching may strengthen caregiver confidence and safer home recovery after pediatric laparotomy.

Keywords: Caregivers, Patient Discharge, Laparotomy, Child, Postoperative Care, Pediatric Nursing

1. Introduction

Pediatric laparotomy is often performed for urgent abdominal conditions and places a sudden, high-responsibility caregiving role on families. While discharge from hospital is a positive milestone, it also shifts wound observation, pain control, diet progression, activity restriction, and early recognition of danger signs to caregivers. Pediatric surgical readmission is used as a quality indicator, and studies show that emergency admissions and abdominal conditions contribute importantly to post-discharge returns [1,2]. Laparotomy wounds are clinically sensitive because surgical site infection and dehiscence can prolong recovery and hospital stay, especially in resource-limited settings [3].

Discharge readiness is therefore more than a checklist. It includes caregiver knowledge, emotional strength, confidence to perform treatments, and practical support at home. Parents and providers may not share the same understanding of a successful discharge, and communication gaps can leave families uncertain about symptoms, medicines, follow-up, and when to return to hospital [4]. The Parent Readiness for Hospital Discharge Scale provides a validated means of capturing this family perception before the child leaves the ward [5]. Pediatric medical-surgical evidence also indicates that caregiver readiness is shaped by discharge teaching quality, child age, caregiver age, and hospital stay duration [6]. Structured discharge approaches such as SAFER Care have improved caregiver comprehension of key instructions, supporting the need for clear, repeated, and family-centered communication [7].

This transition is a critical point for patient safety because the same caregiver who receives instructions also becomes the person who notices fever, vomiting, wound discharge, feeding intolerance, or changes in the child's behavior. A rushed explanation at the bedside may be remembered poorly when the family reaches home. Visual and written materials are especially important when caregivers have varied education levels or when several family members share care tasks.

Despite this evidence, few studies focus specifically on caregivers of children after laparotomy in South Indian pediatric surgical wards. These caregivers may have limited health literacy, first-time discharge experience, financial constraints, and fear about wound dressing or sudden complications. Quantitative readiness scores alone cannot fully describe these lived expectations. The present study was conducted to assess hospital discharge readiness, identify associated demographic and clinical variables, and explore discharge expectations among caregivers of children who underwent laparotomy.

2. Materials and Methods

An explanatory sequential mixed-methods design was adopted. The quantitative component used a descriptive survey, followed by a qualitative phenomenological exploration. The study was conducted in the postoperative wards of the Institute of Child Health, Chennai. The target population included caregivers of children aged 1-12 years who had undergone laparotomy and were fit for discharge or had been discharged within the previous 48 hours.

The quantitative sample included 60 caregivers selected by non-probability convenience sampling. Caregivers willing to participate and able to understand Tamil or English were included. Caregivers of children discharged against medical advice, children with significant cognitive or learning impairment, and caregivers with a history of substance abuse or mental illness were excluded. For the qualitative phase,

six caregivers were selected purposively and interviewed until responses became repetitive and no new themes emerged.

Data were collected in the ward after routine clinical care was completed so that the caregiver could respond without pressure. The quantitative questionnaire required approximately 20-25 minutes. Data were collected using four tools: a sociodemographic proforma, a clinical variables proforma, the Readiness for Hospital Discharge Scale - Parent Version, and a semi-structured interview schedule. The readiness scale used an 8-item, 0-10 rating format, giving a maximum score of 80; higher scores indicated greater readiness. Scores were interpreted as low, moderate, and high readiness based on the study criteria. Tool content validity was obtained from nursing experts.

Ethical approval was obtained from the Institutional Ethics Committee of Madras Medical College, Chennai, and permission was obtained from the Director of the Institute of Child Health. Written informed consent was taken. Quantitative data were analyzed using frequency, percentage, mean, standard deviation, and chi-square test. Qualitative interviews were guided by open questions on expected home care, recovery concerns, professional support, confidence, medication, wound care, diet, and emotional needs. Interview data were audio-recorded, translated, transcribed, coded, and analyzed thematically with member checking to improve credibility. The reporting of results integrated numbers with caregiver narratives to make the findings useful for nursing discharge planning.

3. Results

Among 60 caregivers most were aged 26-30 years (37, 61.67%), female (46, 76.67%), mothers (45, 75.00%), home workers (46, 76.67%), and from nuclear families (47, 78.33%). A first-time discharge experience was reported by 42 caregivers (70.00%). Among children, 33 (55.00%) were aged 4-7 years and 35 (58.33%) were female. Abdominal surgery was documented in 57 children (95.00%), while intestinal surgery was documented in 3 (5.00%). At the time of surgery, 31 children (51.67%) were aged 1-3 years. Hospital stay was 1-3 days for 40 children (66.67%), 4-7 days for 10 (16.67%), 8-10 days for 7 (11.67%), and more than 10 days for 3 (5.00%). No postoperative complications were reported in the study records. The short stay pattern is important because many families had limited time to observe dressing care, medication routines, and feeding progression under supervision before going home (Table 1).

Table 1: Sociodemographic variables of the caregivers of the children undergoing laparotomy

Demographic variable		**Number of caregivers (n=60)**	**%**
Age of Caregiver	21-25 years	19	31.67%
	26-30 years	37	61.66%
	31-35 years	4	6.67%
	Above 35 years	0	0.00%
Gender of Caregiver	Male	14	23.33%
	Female	46	76.67%
Educational Qualification of Caregiver	Informal education	20	33.33%
	Primary education	17	28.33%

	Secondary education	8	13.34%
	Graduate and above	15	25.00%
Occupation of Caregiver	Home worker	46	76.67%
	Semi –Skilled worker	10	16.66%
	Skilled worker	4	6.67%
	Professional worker	0	0.00%
Family Type	Nuclear family	47	78.33%
	Adopted family	13	21.67%
	Blended family	0	0.00%
	Extended family	0	0.00%
Number of Children	1	20	33.33%
	2	40	66.67%
	3	0	0.00%
	4 or more	0	0.00%
Age of Child	1-3 years	23	38.33%
	4-7 years	33	55.00%
	8-12 years	4	6.67%
Gender of Child	Male	25	41.67%
	Female	35	58.33%
Caregiver's Relationship to Child	Mother	45	75.00%
	Father	15	25.00%
	Grandparent	0	0.00%
	Other relative (e.g., aunt, uncle)	0	0.00%
Type of Residence	Urban	34	56.67%
	Rural	12	20.00%
	Semi urban	14	23.33%
Religion	Hindu	48	80.00%
	Muslim	5	8.33%
	Christian	7	11.67%
	Others	0	0.00%
Previous Experience with Hospital Discharge	First-time discharge	42	70.00%
	Previous discharge experience	18	30.00%

The total mean discharge readiness score was 43.37 +/- 9.98 out of 80, corresponding to 54.21% of the maximum score. Item-wise, caregivers scored lowest for perception of the child's strength (mean 3.35 +/- 1.41; 33.50%) and their own strength (mean 4.07 +/- 1.76; 40.70%). Better scores were observed for help with household activities (mean 6.90 +/- 2.22; 69.00%) and help with child personal care (mean 6.82 +/- 1.83; 68.20%). Overall, 34 caregivers (56.67%) had moderate readiness, 20 (33.33%) had low readiness, and 6 (10.00%) had high readiness (Figure 1).

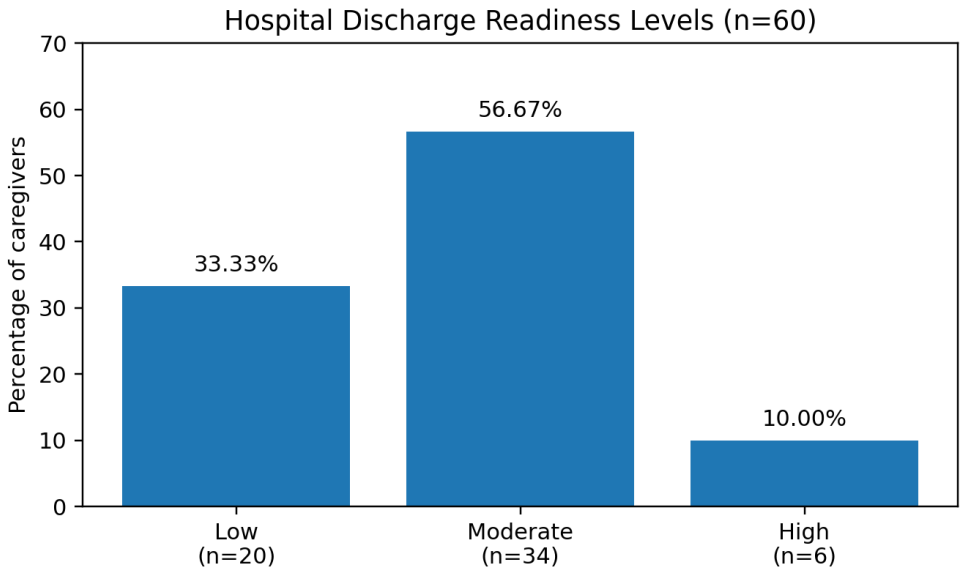

Figure 1: Level of Hospital Discharge Readiness Among Caregivers

Significant associations were found between discharge readiness and caregiver age (chi-square = 8.63, p = 0.01), caregiver gender (chi-square = 4.65, p = 0.05), previous discharge experience (chi-square = 5.71, p = 0.05), and duration of hospital stay (chi-square = 8.94, p = 0.05). Other demographic and clinical variables were not statistically significant.

Four qualitative themes emerged. First, confidence in post-discharge care was strengthened by family support and by explanations received from doctors and nurses. Second, anticipated challenges in home management centered on emergency concerns; caregivers wanted a contact number because they feared sudden fever, wound problems, or pain at home. Third, expectations for guidance included diet charts, medicine schedules, written instructions, and practical wound-care demonstrations. Fourth, emotional and psychological wellbeing included the child's temporary social isolation, caregiver fear, and the caregiver's intention to comfort the child during recovery. A common caregiver view was: "If they wrote down the instructions, I would not forget what to do." Another caregiver felt confident because the hospital team had explained diet and care before discharge, but still wanted support nearby if a sudden problem occurred. These narratives show that confidence and anxiety can exist together. In practical terms, caregivers did not reject discharge; rather, they wanted a safer bridge between hospital instructions and the first few days at home, when doubts are most likely to arise (Figure 2).

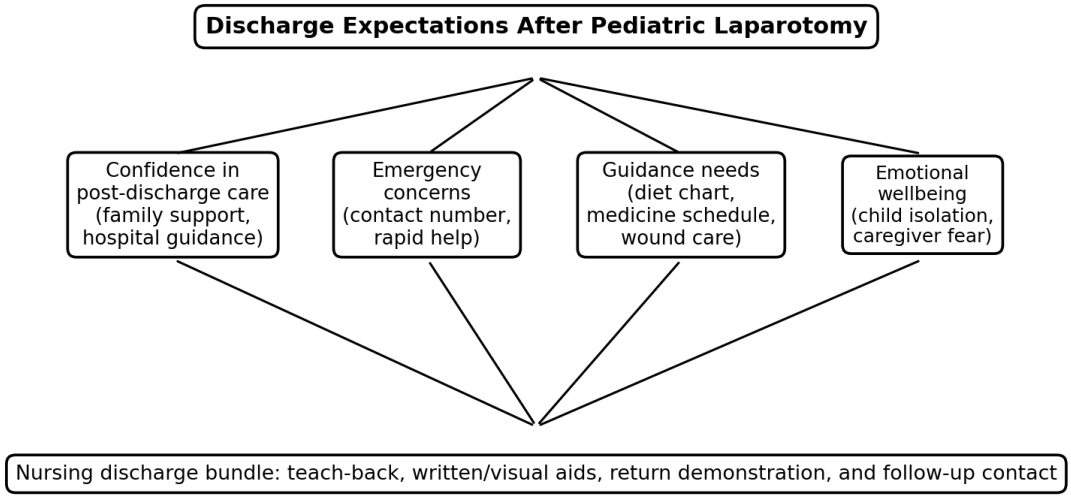

Figure 2: Thematic Map of Caregiver Discharge Expectations

4. Discussion

This study found that most caregivers had only moderate readiness after pediatric laparotomy, with one-third reporting low readiness. The score pattern was clinically meaningful: caregivers felt relatively supported by family members but less confident about their own and the child's physical strength. This suggests that discharge decisions based only on medical fitness may miss the caregiver's emotional and practical readiness. Standardized medication and discharge processes have improved caregiver understanding in pediatric settings, indicating that systematic teaching can reduce confusion at home [8].

The significant association with hospital stay duration may reflect the extra time available for repeated explanations and caregiver observation of postoperative care. Similar transition studies after pediatric surgery show that parents need time, hands-on teaching, and reassurance before assuming full responsibility at home [9]. Caregivers in the present study repeatedly requested written schedules, diet examples, and clarity about wound care, consistent with needs-assessment research among parents after complex cardiac surgery [10]. Their request for an emergency contact number also matches mHealth-supported discharge programs, where reminders and nurse contact improved caregiver engagement after discharge [11].

Pain, wound dressing, feeding, and emotional recovery were the main human concerns in the interviews. Qualitative work on postoperative pain has shown that parents often struggle to judge pain severity and medication timing after discharge [12]. Emotional strain was also evident: some caregivers felt scared, while children became quieter because play and movement were restricted. Similar pediatric injury research reports that families need psychological support after discharge, not only physical care instructions [13]. Research after congenital heart surgery also shows that readiness scores can reveal families who may need closer clinical engagement after discharge [14].

The study is limited by its single-center design, convenience sampling, short data-collection period, and self-reported responses. Because all children had no recorded postoperative complications, the findings mainly reflect readiness for routine discharge rather than a complicated recovery. Nevertheless, the mixed-methods approach gives useful nursing evidence for designing laparotomy-specific discharge protocols. A practical protocol should begin before discharge day, allow a return demonstration of wound care, confirm medication understanding through teach-back, and provide one written page in the caregiver's language. Future studies can test whether such a bundle increases readiness scores and reduces unplanned post-laparotomy visits.

5. Conclusion

Caregivers of children after laparotomy showed mainly moderate discharge readiness, with important gaps in strength, knowledge, written guidance, and emergency planning. Nurse-led discharge teaching with visual aids, written schedules, wound-care demonstration, diet planning, and follow-up contact may improve caregiver confidence and safer recovery at home. These steps are feasible, low-cost, and closely aligned with family-centered pediatric nursing.

6. Declarations

Conflict of interest: The author declares no conflict of interest.
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Ethical approval: Approval was obtained from the Institutional Ethics Committee, and written informed consent was obtained from all participants

References

1. Mears AL, Bisharat M, Murphy F, Sinha CK. Readmission within 30 days of discharge (ReAd): a quality-of-care indicator in paediatric surgery. Pediatric Surgery International. 2019 May 1;35(5):597-602.
2. Brown EG, Anderson JE, Burgess D, Bold RJ, Farmer DL. Pediatric surgical readmissions: are they truly preventable?. Journal of pediatric surgery. 2017 Jan 1;52(1):161-5.
3. Temesgen F, Gosaye A, Starr N, Kiflu W, Getachew H, Dejene B, Tadesse A, Derbew M, Negussie T. Early outcome of laparotomy wounds in pediatric patients in TASH, Addis Ababa, Ethiopia: a six-months prospective study. Ethiopian journal of health sciences. 2021 Jan 1;31(1).
4. Brittan M, Albright K, Cifuentes M, Jimenez-Zambrano A, Kempe A. Parent and provider perspectives on pediatric readmissions: what can we learn about readiness for discharge?. Hospital Pediatrics. 2015 Nov 1;5(11):559-65.
5. Weiss ME, Lerret SM, Sawin KJ, Schiffman RF. Parent readiness for hospital discharge scale: psychometrics and association with postdischarge outcomes. Journal of Pediatric Health Care. 2020 Jan 1;34(1):30-7.
6. Alzahrani MA, Alharbi MF. Discharge Readiness Among Primary Caregivers in Pediatric Medical–Surgical Units in Jeddah, Saudi Arabia. Children. 2024 Nov 27;11(12):1447.
7. Uong A, Philips K, Hametz P, Dunbar J, Jain P, O'Connor K, Offenbacher R, Eliezer K, Pilnick C, Kiely V, Rinke ML. SAFER care: improving caregiver comprehension of discharge instructions. Pediatrics. 2021 Apr 1;147(4):e20200031.

8. Philips K, Zhou R, Lee DS, Marrese C, Nazif J, Browne C, Sinnett M, Tuckman S, Modi A, Rinke ML. Implementation of a standardized approach to improve the pediatric discharge medication process. Pediatrics. 2021 Feb 1;147(2).
9. DiFazio RL, Miller PJ, Geyer D, Shore BJ, Snyder BD, Vessey JA. Parental caregivers' perception of their transition from hospital to home in children with cerebral palsy who have undergone orthopedic surgery. Journal of pediatric nursing. 2023 Mar 1;69:47-55.
10. Mannarino CN, Michelson K, Jackson L, Paquette E, McBride ME. Post-operative discharge education for parent caregivers of children with congenital heart disease: a needs assessment. Cardiology in the Young. 2020 Dec;30(12):1788-96.
11. Behan J, Kabajaasi O, Derksen B, Sendegye G, Kugumikiriza B, Komugisha C, Sundararajan R, Jacob ST, Kenya-Mugisha N, Wiens MO. Caregivers' and nurses' perceptions of the Smart Discharges Program for children with sepsis in Uganda: A qualitative study. Plos one. 2024 Oct 2;19(10):e0307089.
12. Dagg W, Forgeron P, Macartney G, Chartrand J. Parents' management of adolescent patients' postoperative pain after discharge: A qualitative study. Canadian Journal of Pain. 2020 Sep 1;4(3):51-60.
13. Ridings LE, Davidson TM, Walker J, Winkelmann J, Anton MT, Espeleta HC, Nemeth LS, Streck CJ, Ruggiero KJ. Caregivers' and Young Children's Emotional Health Needs After Pediatric Traumatic Injury. Clinical pediatrics. 2022 Sep;61(8):560-9.
14. Kim ME, Kasparian NA, Zang H, Pater C, Chlebowski MM, Marcuccio E, Florez A, Morales DL, Madsen N, Moore RA. Are parent discharge readiness scores effective for patients with congenital heart disease after cardiac surgery?. The Journal of Pediatrics. 2023 Jun 1;257:113361.

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