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Case Series

Exploring the practicality of transition care guidance for paediatric CHD patients: a case series

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ABSTRACT

This case series evaluates the feasibility of implementing a nurse-led transition care program among caregivers of CHD children admitted to a pediatric medicine ward. A quantitative approach was used to collect the data from eight caregivers and children distributed equally among control and experimental group. The study has used data collection instruments including demographic proforma, caregiver's knowledge and self-efficacy format as well as satisfaction form. Results highlighted the feasibility of implementing a nurse-led transition care program in pediatric patients and showed the potential benefit of a nurse-led program in terms of improved caregiver readiness for discharge. Study findings provide a base for implementing structures and transition care models to improve post-transition healthcare outcomes.

Keywords: Child, Case series, Caregivers, Self-efficacy

INTRODUCTION

Children with congenital heart disease (CHD) require lifelong management and care. The transition period from hospital to home is always a vulnerable phase for children with CHD and their parents. Transition always comes with a lot of challenges, especially for caregivers of CHD children.[1] This phase needs the caregiver's effective management of children at home, managing medication regimens, recognizing early alarming signs and complications and maintaining follow-up.

Studies have shown that lack of caregiver preparedness and structured discharge planning in current hospital setups. Inadequate caregiver education and discharge planning lead to poor health outcomes for children in terms of increased emergency dept. Visit readmission rate medication errors.[2] Transition care programs have emerged over the years as a vital strategy to address these challenges.[3] They offer a structured care plan to equip caregivers with the necessary knowledge and skills for managing a child's health condition post-transition. Nurse-led transition care programs have a special place in improving children's health outcomes due to their holistic approach combining education, training and care coordination.[4]

This case series investigates the feasibility of implementing a nurse-led transition care program for children with CHD and their caregivers. It assesses the effectiveness of this program in improving caregiver knowledge, skill and satisfaction with transition planning. By focusing on these outcomes our case series aims to evaluate if such a transition care program can enhance caregiver preparedness and contribute to better transition care for children with CHD, potentially reducing hospital readmission and health outcomes.

CASE SERIES

The study was conducted from October to November 2023 in the pediatric medicine units of All India Institute of

Medical Sciences (AIIMS) Bhubaneswar, Hospital. Pediatric medicine wards are composed of a total of 60 beds. Participants included were between newborn to 3 years old age.

A consecutive sampling method was used to allocate samples between the control and experimental groups. Inclusion criteria included children admitted with a confirmed diagnosis of congenital heart disease with or without developmental delay.

Children with any other systematic disorder or cardiac failure were excluded from this case series. Ethical approval was obtained from the Institute Ethical Committee (IEC) and consent was taken from all the caregivers before starting data collection.

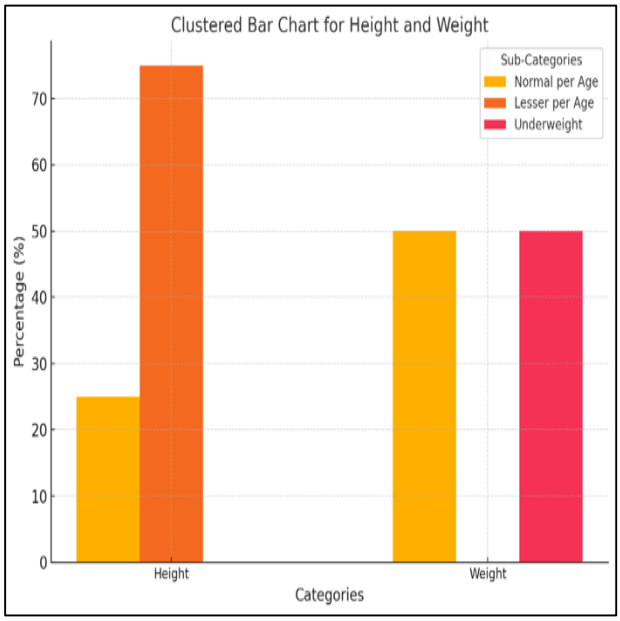

Figure 1: Anthropometric parameters.

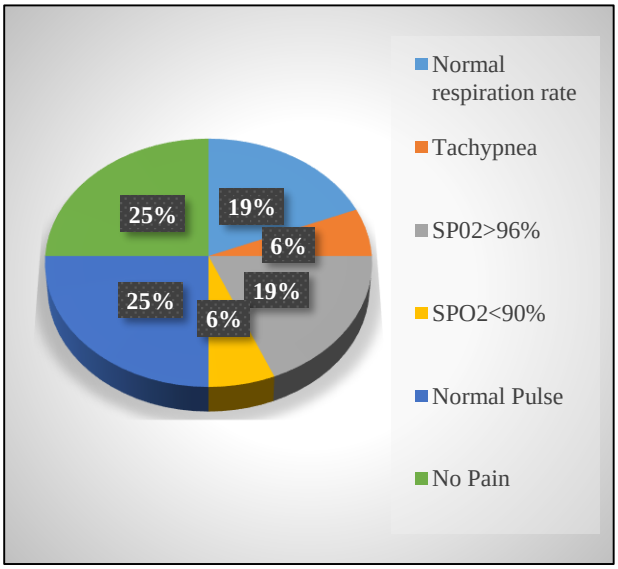

Figure 2: Bar chart showing vital signs.

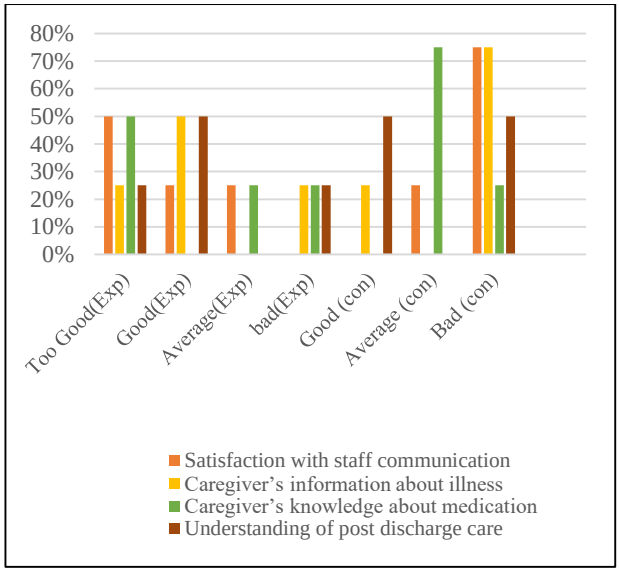

Figure 3: Showing satisfaction of caregivers with different domains of transition care.

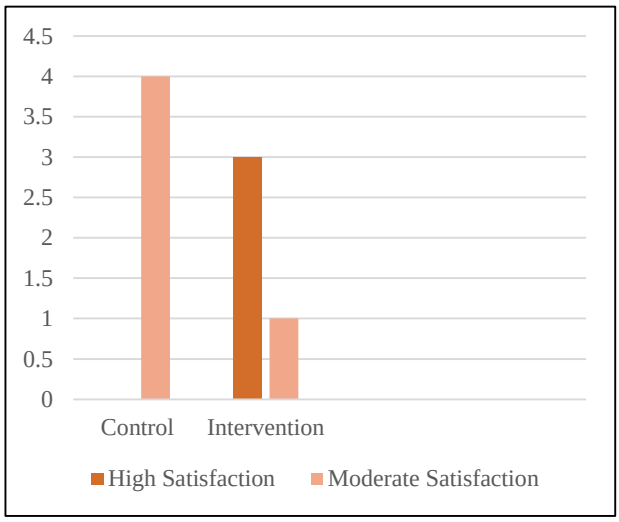

Figure 4 : Caregiver's Satisfaction comparison chart between two groups.

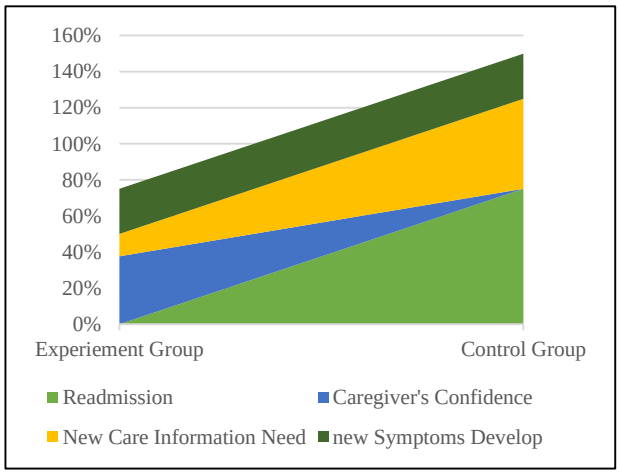

Figure 5 : Readmission rate in both groups.

Data collection tools included demographic proforma, physical assessment proforma, caregiver's knowledge and self-efficacy format, satisfaction rating scale and telephone follow-up format. Baseline assessment and post-intervention assessment included caregiver's knowledge and self-efficacy which was done on admission and at discharge simultaneously. The control group received routine discharge care while the experimental group received a structured nurse-led transition care program.. Collected data were analyzed using SPSS version 22. Descriptive and inferential statistics were used to analyse the data

Mothers between the ages of 20 and 30 made up the majority of caregivers (75%) and housewives (62.5%). In terms of education, 25% were graduates, 37.5% had finished the tenth grade and 37.5% had finished the twelfth. None of the caregivers had a family history of congenital heart disease (CHD) or other comorbidities and all were primary caretakers (Table 1) . All of the children with cyanotic CHD were female (62.5%) and the majority (87.5%) were younger than one year. All of the children had previously been hospitalized and the majority (87.5%) did not have any comorbidities (Table 2).

Before the intervention, the intervention group's pre-test score for knowledge was 8 (SD=1.258), but the control groups were 9 (SD=1.623). Before the intervention, the two groups' knowledge levels were comparable, as evidenced by the lack of a significant difference between them ($p>0.05$). Following the intervention, the intervention group scored 24 (SD=8.367) on the post-test, while the control group scored 13 (SD=4.546). The difference between the two groups was not statistically significant ($p>0.05$), even though the intervention group scored higher. Nonetheless, the intervention group demonstrated a statistically significant improvement ($p<0.05$) with a pre-test score of 8.75 (SD=1.25) and a post-test score of 24.00 (SD=8.36). This suggests that the intervention was successful in raising the caregivers' level of awareness. However, the control group's scores did not change significantly ($p>0.05$), indicating that there was no improvement in knowledge without the intervention (Table 3).

The control group's mean pre-test score for self-efficacy was 6.50 (SD=4.123) before the intervention, while the intervention groups was 4.75 (SD=2.217). The two groups' self-efficacy levels at baseline were similar, as indicated by a t-test that revealed no significant difference between them ($p>0.05$). Following the intervention, the intervention group scored 25.50 (SD=14.888) on the mean post-test, compared to 8.50 (SD=3.317) for the control group. A significant difference between the groups was found by the t-test ($p<0.05$), suggesting that the intervention increased caregiver self-efficacy. Nevertheless, neither group's self-efficacy changed significantly, according to within-group comparisons ($p>0.05$). This implies that although there was no discernible change within either group, the intervention group outperformed the control group (Table 4). The intervention group exhibited considerably greater levels of satisfaction with care and preparedness for discharge. Compared to only 25% of caregivers in the control group, 75% of those in the intervention group expressed good satisfaction with their care. In a similar vein, 50% of caregivers in the intervention group gave discharge readiness an excellent rating, whereas 50% of caregivers in the control group gave it a poor rating. While 50% of caregivers in the control group assessed their understanding of post-discharge care as extremely low, 50% of caregivers in the intervention group rated their understanding as good(Figure 3, Figure 4). Children's physical examinations revealed that 75% had stunted growth and 50% were underweight. Although 25% of children in the control group showed tachypnea, the majority of children (75%), had normal breathing rates. In 75% of cases, SpO_2 values were higher than 96% (Figure 1, Figure 2).

The telephone follow-up revealed further insights. In the control group, 25% of children experienced fast breathing and one child (25%) had a seizure. Readmissions occurred in 75% of the control group (3 children), while no readmissions were reported in the intervention group (Figure 5) . In terms of caregiver confidence, none in the control group reported confidence, while 37.5% in the intervention group expressed confidence in managing their child's routine care. New care information needs were more prevalent in the control group, with 50% of caregivers requiring additional information on medication administration, compared to 12.5% of the intervention group who needed guidance on nebulization and seizure care. These findings underline the effectiveness of the nurse-led transition care guidance in addressing caregiver concerns, reducing readmission rates and increasing caregiver confidence and knowledge (Figure 5) .

The results of this study demonstrate the positive impact of nurse-led transition care guidance (TCG) on caregivers' knowledge, satisfaction and confidence in managing the care of children with congenital heart disease (CHD) post-discharge. The intervention group showed significantly higher levels of satisfaction with treatment and discharge readiness, greater caregiver confidence in managing routine care and a marked reduction in readmission rates.

The need for specialized care information was more targeted and specific in the intervention group, while the control group expressed more general concerns regarding medication administration. Additionally, the telephone follow-up further highlighted the benefits of the intervention, with caregivers in the intervention group reporting fewer challenges and a higher level of preparedness for managing their child's care. These findings suggest that nurse-led TCG can effectively improve the transition care process, reduce caregiver anxiety and enhance the overall post-discharge care experience for children with CHD.

Table 1: Frequency and percentage distribution of child's demographic profile.

Variables	Frequency (%)
Age (in years)	
<1	7 (87.5)
>1	19 (12.5)
Gender	
Male	3 (37.5)
Female	5 (62.55)
Diagnosis	
Acyanotic disease	8 (100)
Any comorbidity present	
Pneumonia	1 (12.5)
No	7 (87.5)
Previous hospitalization	
Yes	8 (100)

Table 2: Frequency and percentage distribution of caregiver's demographic profile.

Variables	Frequency (%)
Age (in years)	
20-30	8 (100)
Relationship with child	
Mother	6 (75)
Father	2 (25)
Previous hospitalization experience	
Yes	8 (100)
Education qualification	
10^{th} pass	3 (37.5)
12^{th} pass	3 (37.5)
Graduate	2 (25)
Occupation	
Business	1 (12.5)
Farming	1 (12.5)
Job	1 (12.5)
Housewife	5 (62.5)
Primary caregiver	
Yes	8 (100)
Family h/o CHD	
No	8 (100)
Comorbidity in family hypertension	8 (100)

Table 3: Comparison of caregiver's knowledge in control and intervention groups.

Comparisons	Control group	Intervention group	t value	P value
Within group comparison				
Pre- knowledge vs post – knowledge	Mean=9, SD=1.623 (Pre), Mean=13, SD=4.546 (Post)	Mean=8, SD=1.258 (Pre), Mean=24, SD=8.36 (Post)	-1.611	0.20
Change (pre to post)	Mean Difference=-4.000, SD=4.967	Mean Difference=-15.250, SD=9.450	-3.235	0.04
Between-group comparison				
Pre-knowledge	Mean=9, SD=1.623	Mean=8, SD=1.258	0.24	0.81
Post-knowledge	Mean=13, SD=4.546	Mean=24, SD=8.36	-2.310	0.06

Table 4: Comparison of caregiver's self-efficacy in control and intervention groups.

Comparisons	Control gsroup	Intervention group	t value	P value
Within group comparison				
Pre-self-efficacy vs post-self-efficacy	Mean=6.5, SD=4.123 (Pre), Mean=8.5, SD=3.317 (Post)	Mean=4.7, SD=2.217 (Pre), Mean=25.5, SD=18.888 (Post)	-2.19	0.11
Change (pre to post)	Mean Difference=-2.000, SD=1.826	Mean Difference=-20.75, SD=16.46	-2.5	0.08
Between-group comparison				
Pre-self-efficacy	Mean=6.5, SD=4.123	Mean=6.5, SD=4.123	0.74	0.48
Post-self-efficacy	Mean=8.5, SD=3.317	Mean=25.5, SD=18.888	-2.22	0.002

DISCUSSION

Case series findings are aligned with previous research studies showing the effectiveness of nurse-led transition care programs on caregiver preparedness and improved health outcomes. A study by Heath et al, (2015), evaluated the effectiveness of telephone follow-up in the post-hospital discharge period, result showed improvements in caregivers' confidence in managing patients at home as well as reduced rates of readmission.[5] Another study by Lie et al, showed that post-transition phone follow-up for caregivers of patients undergoing aortic valve replacement surgery has improved caregivers' satisfaction and adherence to care protocol. Both of these studies' results have highlighted the impact of nurse-led transition care programs on improving caregivers' satisfaction with transition care.[6]

A study by Gebeyehu TF et al, reported that transition programs including caregiver education significantly reduced caregiver-induced medication error and improved caregiver's knowledge and practice skills. This study focuses on the importance of structured transition care programs provided by nurses in enhancing caregivers' readiness for post-transition care.[7]

Another study by Levoy et al, that a caregiver's education program without phone follow-up showed no improvement in readmission rate, showing the importance of maintaining care continuity beyond the hospital setting. This case series study focuses on caregiver's education and also telephone follow-up in the discharge phase to reinforce caregiver's learning and provide ongoing support.[9]

A study by Meleis et al, highlighted cultural differences as an important factor influencing the effectiveness of transition care programs. Cultural barriers as a significant factor influencing the effectiveness of transition care programs. The only drawback this study faced was the unavailability of all caregivers for post-charge follow-up and also the language barrier to do a proper effective follow-up Identifying these challenges is important for future studies to improve program accessibility.[8]

Study findings show that there is a positive impact of nurse-led transition care programs on caregiver's knowledge, efficacy and satisfaction in managing CHD child care. The study results align with previous studies highlighting the importance of structures in caregiver education and proper discharge planning. The results align with previous studies highlighting the role of nurse-led interventions in enhancing Nurse-led transition programs enhancing caregiver preparedness and readiness for discharge and reducing post-transition health complications in children.

This is a feasibility study, future larger scale study is important to improve the generaliability of findings. The case series gives insight into refining the intervention more specifically, scaling it for broader implementation on a larger scale. Future studies should explore the long-term effect of transition care programs on child's health outcomes.

CONCLUSION

This case series highlights the effectiveness of nurse-led transition care guidance in equipping caregivers with the knowledge and skills required to manage children with CHD. The intervention demonstrated significant improvements in caregiver satisfaction and self-efficacy, paving the way for integrating transition care models into routine pediatric care. Further research with larger sample sizes is recommended to validate these findings and explore the long-term impact on patient outcomes.

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