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Research Article

The Relationship Between Family Support and Fall Risk Prevention in Children in Inpatient Rooms Zal AR SUD Dr. H. Slamet Martodirdjo Pamekasan

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Abstract: Falls remain a major patient safety concern in hospital settings, including pediatric wards. Children are vulnerable to falls during hospitalization due to their active movements and curiosity toward their surroundings. This study aims to examine the relationship between family support and fall prevention efforts among pediatric patients in the ZAL A Inpatient Unit of Dr. H. Slamet Martodirdjo Regional Hospital, Pamekasan. An observational analytic study with a cross-sectional approach was conducted. From 114 families of children identified as fall-risk patients, 89 respondents were selected using simple random sampling. Data were collected using a 15-item family support questionnaire and the Humpty Dumpty Fall Scale, then analyzed using the Chi-Square test. The results showed that 82.0% of families provided adequate support, while 67.4% of children were categorized as high risk for falls. Among families with low support, 93.8% of children were classified as high risk, whereas among families with better support, 61.6% were high risk and 38.4% were low risk. The Chi-Square test showed a p-value of 0.029 ($p < 0.05$), indicating a significant relationship between family support and fall prevention outcomes. Stronger family support contributes to improved fall prevention among hospitalized children.

Keywords: Family Support; Fall Prevention; Hospitalization; Patient Safety; Pediatric Patients.

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1. Introduction

The risk of falling is a condition where someone suddenly falls and sits or lies on the floor or a lower surface, whether accompanied by loss of consciousness or injury or not (Nurhayati et al., 2023). In pediatric patients who are hospitalized, this problem becomes more complicated because their motor and cognitive skills are not yet fully developed, plus their curiosity drives them to move without considering the dangers that may arise (Nisak et et al., 2025).

Global data from WHO (2021) notes that falls are in second place as a cause of death due to accidents, with the number of victims reaching 684,000 people per year. Of the approximately 37.3 million falls that require medical treatment each year, children are the group most affected. In fact, WHO and UNICEF estimate that around 47,000 children die every year due to falls. At the national level, the incidence of patient falls is in the third largest number of hospital cases in Indonesia and is in second place after medication errors, with a proportion of 34 cases or around 14% of all incidents (Mappanganro et al., 2020). Meanwhile,

in East Java Province itself, the risk of falls was recorded at 11.7%, and specifically in children's service units the figure was much higher, namely 56.7% (Azizah, 2022). As for Dr. RSUD. H. Slamet Martodirdjo Pamekasan, there were 114 pediatric patients who were at risk of falling throughout October 2025.

The consequences of falls in children are quite varied, ranging from abrasions (12.5%), broken bones (12.5%), bruises (37.5%), to permanent disabilities (Kim et al. al., 2021). Not to mention the long-term consequences of stunted growth and development, decreased quality of life, and increased medical costs (Ministry of Health of the Republic of Indonesia, 2018). One preventive measure considered crucial is strengthening family involvement and support during the child's care process. The family plays a central role as a companion who supervises and assists the child's movements, ensures proper safety equipment is installed, and creates a safe care environment (Lee et al., 2022). Based on this description, this study aims to examine the relationship between family support and the prevention of the risk of falls in children in the ZAL A Inpatient Ward, Dr. H. Slamet Martodirdjo Pamekasan Regional General Hospital.

2. Research Methods

The design used in this study was an analytical observational study with a cross -sectional approach, which was conducted in the ZAL A Inpatient Ward of Dr. H. Slamet Martodirdjo Pamekasan Regional General Hospital during the period of February to March 2026. The study population included all families of pediatric patients at risk of falling, totaling 114 people. Through a probability sampling technique with a simple random sampling and Slovin formula calculation (d = 0.05), obtained 89 respondents who met the established criteria.

The inclusion criteria set include: (a) families with children aged 1–15 years; (b) parents or guardians who accompany the child throughout the treatment period; (c) willingness to be a respondent as evidenced by signing an informed consent form. consent; and (d) the ability to communicate well, both verbally and in writing. Meanwhile, families were excluded from the study if their child was unconscious or in a coma, or if the family was not present when data collection took place.

Family support was the independent variable measured using a 15-item questionnaire covering four components—emotional, appraisal, instrumental, and informational—categorized as supportive (score ≥9) and unsupportive (score 1–8). The dependent variable, fall risk, was measured using the Humpty Scale. Dumpty consists of seven parameters, with low-risk (scores 7–11) and high-risk (scores ≥12) categories. Prior to use, the family support instrument underwent validity and reliability testing on 10 respondents at Sukma Wijaya Hospital. Of the initial 20 items, 15 were found valid (r-count > r-table) using Cronbach's alpha ranged from 0.974–0.979, which indicates a good level of reliability.

Data processing was carried out in two stages: univariate analysis to describe the frequency distribution of each variable, and bivariate analysis using the Chi- Square test to determine whether there is a relationship between the independent and dependent variables on a nominal scale. Prior to implementation, this study obtained ethical approval from the Head of the Department of Public Health, Dr. H. Slamet Martodirdjo Pamekasan Regional General Hospital.

3. Results and Discussion

Respondents Characteristics

Of the 89 respondents, the majority were female (59 respondents; 66.3%), aged 27–32 years (25 respondents; 28.1%), had a high school/vocational school education (35 respondents; 39.3%), and worked as housewives/housewives (40 respondents; 44.9%).

Table 1. Distribution of Family Support for Pediatric Patients.

No.	Family Support	f	%
1.	Does not support	16	18.0
2.	Support	73	82.0
	Total	89	100

Source: Primary Data 2026.

Referring to Table 1, the majority of pediatric patient families (73 people; 82.0%) were considered supportive, while only a small proportion (16 people; 18.0%) were not. The large proportion of supportive families indicates a fairly good level of awareness of the importance of their presence and support during their child's treatment. Having family by their side can

foster a sense of security, help meet daily needs, and reduce the likelihood of unexpected incidents (Friedman et al., 2019). However, the continued lack of support from families indicates the need to strengthen education from healthcare professionals regarding the role of families in ensuring the safety of pediatric patients (Zulviani & Ariyani, 2024).

Table 2. Distribution of Fall Risk in Pediatric Patients.

No.	Risk of Falling	f	%
1.	Low	29	32.6
2.	Tall	60	67.4
	Total	89	100

Source: Primary Data 2026.

As presented in Table 2, the majority of children (60 people; 67.4%) were in the highrisk category for falls, while almost half of the remaining (29 people; 32.6%) were classified as low risk. This high risk of falls was influenced by several factors, including: (1) age factors — the majority of children were under 3 years old (46.1%) with suboptimal balance abilities; (2) gender factors — predominantly boys (62.9%) who tended to be more physically active; (3) diagnostic factors — as many as 47.2% experienced oxygenation disorders that impacted body balance; and (4) cognitive impairment factors — 46.1% of children were not fully aware of their limitations. These findings are in line with the view of Potter & Perry (2021) that the risk of falls in hospitalized children is influenced by developmental characteristics, medical conditions experienced, and a care environment that is unfamiliar to the child.

Table 3. Relationship between Family Support and Risk of Falls.

Family Support	Risk of Falling				Total
	Tall	%	Low	%	
Does not support	15	16.9	1	1.1	16 (18.0%)
Support	45	50.6	28	31.5	73 (82.0%)

Square Test: $p = 0.029$ ($p < 0.05$)

Source: Primary Data 2026.

The data in Table 3 shows that in the less supportive family group, almost all children (15 children; 93.8%) had a high risk of falling and only 1 child (6.2%) had a low risk. Conversely, in the supportive family group, 45 children (61.6%) had a high risk and 28 children (38.4%) had a low risk. The results of the Chi- Square -Fisher Exact test showed a p-value of 0.029 ($p < 0.05$), so the alternative hypothesis (Ha) was accepted and the null hypothesis (Ho) was rejected. Thus, it can be concluded that there is a significant relationship between family support and the prevention of the risk of falling in children in the ZAL A Inpatient Ward of Dr. H. Slamet Martodirdjo Pamekasan Regional General Hospital.

These results reinforce the findings of Zulviani and Ariyani (2024), who emphasized that families play a crucial role in maintaining the safety of pediatric patients throughout their treatment. Families can play an active role in supervising their children's activities, ensuring a safe environment, and complying with healthcare providers' instructions regarding fall prevention measures. Similarly, Miake-Lye et et al. (2020) also stated that family involvement in patient care has been shown to improve safety and reduce the number of falls in hospitals.

Although most families have demonstrated good support, it was also found that in the supportive group, there are still children at high risk of falling (61.6%). This condition is likely influenced by factors other than family support, such as the condition of the disease suffered, the child's age, side effects of treatment, and the characteristics of the treatment room environment (Potter & Perry, 2017). Therefore, in addition to strengthening family support, the active role of health workers in providing education and conducting proactive supervision remains important (Mappanganro et et al., 2020).

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