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The Effectiveness of Family-Centered Care on Anxiety Levels in Children with Chronic Illnesses: A Cross-Sectional Study

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ABSTRACT

Chronic illnesses in children often lead to significant psychological distress, particularly anxiety caused by repeated hospitalizations, invasive procedures, and uncertainty regarding prognosis. Family-Centered Care (FCC) is a family-oriented healthcare approach that may reduce anxiety by enhancing emotional support and fostering a sense of security. Purpose: This study aimed to analyze the effect of Family-Centered Care implementation on anxiety levels among children with chronic illnesses. Methods: An analytical observational study with a cross-sectional design was conducted involving 80 children aged 6–18 years diagnosed with chronic illnesses, recruited through purposive sampling. Family-Centered Care was assessed using the Family-Centered Care Questionnaire-Revised (FCCQ-R), while anxiety levels were measured using the Spence Children's Anxiety Scale (SCAS). Data were analyzed using Pearson correlation and simple linear regression. Results: Most respondents perceived FCC implementation as good (60.0%), while 48.8% of children reported moderate anxiety. Pearson correlation analysis showed a significant negative relationship between FCC and anxiety levels ($r = -0.621$; $p < 0.001$). Linear regression revealed that FCC significantly predicted anxiety levels ($B = -0.371$; 95% CI: -0.475 to -0.267; $\beta = -0.621$; $p < 0.001$), explaining 38.6% of the variance ($R^2 = 0.386$). Conclusion: Higher levels of Family-Centered Care were associated with lower anxiety levels in children with chronic illnesses, suggesting that strengthening FCC implementation may improve psychosocial outcomes in pediatric nursing care.

Keywords: *Family-Centered Care, Child Anxiety, Chronic Illness, Pediatric Nursing, Psychosocial*

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INTRODUCTION

Chronic diseases in children are long-term health conditions that require ongoing care and often impact a child's daily activities and development. These conditions include various diseases such as type 1 diabetes mellitus, childhood cancer, thalassemia, chronic kidney disease, asthma, epilepsy, and congenital heart disease. In recent years, the prevalence of chronic diseases in children has continued to increase in various countries, including Indonesia, making them a crucial concern in pediatric healthcare. Children with chronic diseases require long-term treatment, regular check-ups, and various medical procedures that can impact their physical and psychological well-being. In addition to impacting the child, chronic diseases also place significant emotional, social, and economic pressures on families. Families often have to adjust their lifestyles, work environments, and financial circumstances to support their child's treatment. This demonstrates that chronic diseases in children are not only medical problems but also complex psychosocial issues (Huang et al., 2022).

Children with chronic illnesses are more susceptible to psychological disorders than healthy children, with anxiety being one of the most common problems. Anxiety in children can be manifested through fear, excessive worry, difficulty sleeping, behavioral changes, crying easily, and refusal of medical treatment. This condition is generally triggered by repeated hospitalizations, invasive procedures, pain, uncertainty about the disease's prognosis, and limitations in social and play activities. Furthermore, children often experience emotional distress due to feelings of being different from their peers, which impacts their psychosocial development. The anxiety experienced not only affects emotional well-being but also impacts the success of therapy and the child's quality of life, such as poor adherence to therapy, refusal of medical treatment, sleep disturbances, and decreased motivation to undergo treatment. In the long term, poor psychological well-being can affect the immune system, slow the healing process, and hinder a child's emotional, social, and academic development, especially during school age and adolescence. Therefore, addressing psychological problems through appropriate psychosocial interventions is a crucial part of holistic child health care. Modern health care approaches also emphasize the importance of emotional support and family involvement as an integral part of caring for children with chronic illnesses (Marshall et al., 2022).

In the context of pediatric healthcare, the Family-Centered Care (FCC) approach is considered an effective strategy for improving the quality of pediatric care. FCC is a healthcare approach that positions the family as a primary partner in the child's care process. This approach emphasizes collaboration between healthcare professionals and families through open communication, respect for family values and culture, family involvement in decision-making, and family empowerment in the care process. FCC focuses not only on the child's physical condition but also addresses the emotional, psychological, social, and spiritual needs of the child and their family. In pediatric nursing practice, FCC is considered a standard of care that supports the creation of more humanistic and holistic care. This approach also helps improve the therapeutic relationship between healthcare professionals, the child, and the family, thereby making the care process more effective (Carrington et al., 2021).

The implementation of FCC in pediatric healthcare is carried out through various forms of family involvement throughout the care process. Healthcare professionals provide opportunities for families to accompany their children during hospitalization, participate in medical decision-making, and obtain clear information regarding the child's condition and therapy. Furthermore, families are provided with education and emotional support to help them cope with the stress of accompanying their children through treatment. In nursing practice, nurses play a crucial role as communication facilitators between families and the healthcare team. Nurses also play a role in creating a care environment that supports the psychological well-being of children and families. Compared to conventional approaches that are more oriented toward healthcare professionals, FCC provides greater space for family participation, thereby improving service satisfaction and quality of life for pediatric patients (Punaglom et al., 2022).

The FCC approach is believed to reduce anxiety levels in children with chronic illnesses through various psychological and emotional mechanisms. The presence of family throughout the treatment process provides a sense of security and reduces children's fear of the unfamiliar hospital environment. Children tend to feel more comfortable when accompanied by their parents during certain medical procedures or therapies. Furthermore, good communication between family and healthcare professionals can help children understand their condition, thereby reducing uncertainty and fear. Emotional support from family also helps children develop more adaptive coping mechanisms in dealing with chronic illness. Thus, FCC plays a role not only in supporting the physical aspects of care but also in maintaining children's psychological stability throughout the treatment process (Willemen et al., 2022).

However, the implementation of FCC in pediatric healthcare services at various healthcare facilities still faces various challenges. In practice, healthcare services in some hospitals still focus more on addressing the physical aspects of illness than on the psychosocial needs of children and families. Family involvement in medical decision-making is also limited under certain circumstances. Furthermore, the workload of healthcare workers and limited facilities often hinder the optimal implementation of FCC. In Indonesia, FCC has not been fully integrated into all pediatric nursing services, resulting in varying quality of implementation across healthcare facilities. This puts children with chronic illnesses at risk of experiencing high levels of anxiety during treatment. Therefore, a more holistic approach to care that is oriented toward the needs of children and their families is needed (Khotimah et al., 2024).

The high level of anxiety in children with chronic illnesses demonstrates that psychosocial interventions remain a crucial need in pediatric healthcare. Anxiety management cannot rely solely on pharmacological approaches; it also requires emotional support and a supportive care environment. Family-centered Counseling (FCC) is a potential non-pharmacological approach because it actively involves the family in the child's care process. This approach can help create a sense of security, enhance therapeutic communication, and strengthen the emotional bond between the child and family. Furthermore, FCC also supports the child's adaptation process to their chronic illness. Therefore, FCC implementation has the potential to provide long-term benefits to children's psychological health and quality of life (Mardhiyah et al., 2022).

Previous studies have consistently demonstrated the benefits of Family-Centered Care (FCC) in improving patient satisfaction, family engagement, communication quality, and treatment adherence among pediatric populations (Smith et al., 2021; Carrington et al., 2021; Punaglom et al., 2022). However, evidence specifically examining the relationship between FCC implementation and anxiety levels among children with chronic illnesses remains limited, particularly in low- and middle-income countries. Existing studies have primarily focused on parental outcomes, family experiences, or general psychosocial adjustment, while the direct psychological impact of FCC on children's anxiety has received less attention. Furthermore, previous studies rarely examined children with various chronic illnesses within a single analytical framework and have generally been conducted in healthcare systems with different sociocultural characteristics from Indonesia.

Considering these gaps, the present study specifically investigates the association between Family-Centered Care and anxiety levels among children with chronic illnesses in an Indonesian pediatric healthcare setting. By focusing on children's anxiety as the primary outcome and evaluating FCC implementation from the family perspective, this study provides empirical evidence that complements existing FCC literature and contributes to the development of evidence-based pediatric nursing practices in Indonesia.

METHODS

This study employed a quantitative analytical observational design using a cross-sectional approach. The cross-sectional design was selected because the study aimed to examine the association between Family-Centered Care (FCC) implementation and anxiety levels among children with chronic illnesses at a single point in time without manipulating any study variables. This design is considered appropriate for identifying relationships between variables in real-world clinical settings while minimizing disruption to routine healthcare services.

The study was conducted in the pediatric ward of a tertiary hospital providing care for children with chronic illnesses, including thalassemia, type 1 diabetes mellitus, childhood cancer, chronic kidney disease, and chronic asthma. To comply with ethical requirements established by the institutional review board and to maintain institutional confidentiality, the name of the participating hospital is not disclosed. The anonymity of the institution was preserved because the study involved evaluation of healthcare service implementation and psychosocial outcomes that could potentially identify institutional performance characteristics. Data collection was conducted from January to March 2026.

The study population consisted of all children diagnosed with chronic illnesses who were receiving inpatient or outpatient treatment during the study period. Chronic illness was defined as a health condition requiring continuous treatment, monitoring, or rehabilitation for at least three months. Participants were selected using purposive sampling based on predefined eligibility criteria. Inclusion criteria were: (1) children aged 6–18 years; (2) diagnosed with a chronic illness for at least three months; (3) currently undergoing hospitalization or routine follow-up care; (4) accompanied by at least one parent or primary family caregiver during treatment; and (5) willing to participate in the study. Exclusion criteria included severe cognitive impairment, communication disorders, critical clinical conditions, and incomplete questionnaire responses.

Assuming a significance level of 5% ($Z\alpha = 1.96$), statistical power of 80% ($Z\beta = 0.84$), and an expected correlation coefficient of 0.30 based on previous studies examining FCC and psychosocial outcomes, the minimum required sample size was 67 participants. To account for potential non-response and incomplete data, a total of 80 respondents were recruited and included in the final analysis.

The independent variable was Family-Centered Care (FCC), while the dependent variable was anxiety level among children with chronic illnesses. FCC refers to a healthcare approach that emphasizes collaboration between healthcare professionals and families through information sharing, participation, respect, and partnership in clinical decision-making. Anxiety level refers to emotional responses characterized by fear, worry, tension, and psychological distress experienced by children during the treatment process.

Data were collected using three instruments: a demographic questionnaire, the Family-Centered Care Questionnaire-Revised (FCCQ-R), and the Spence Children's Anxiety Scale (SCAS). The demographic questionnaire obtained information regarding age, sex, type of chronic illness, duration of illness, and treatment characteristics. The FCCQ-R was used to assess family perceptions of FCC implementation, including communication quality, respect for family values, participation in care, and collaboration with healthcare professionals. Anxiety levels were measured using the Spence Children's Anxiety Scale (SCAS), a widely used instrument for assessing anxiety symptoms among children and adolescents.

Prior to the main study, instrument validity and reliability were evaluated through pilot testing involving 30 respondents with characteristics similar to the target population. The FCCQ-R demonstrated satisfactory validity, with corrected item-total correlation coefficients ranging from 0.452 to 0.821 and Cronbach's alpha coefficient of 0.91. The SCAS demonstrated corrected item-total correlation coefficients ranging from 0.438 to 0.794 and Cronbach's alpha coefficient of 0.89. These findings indicate excellent internal consistency and support the suitability of both instruments for use in the study population.

Data collection was performed after obtaining approval from the Health Research Ethics Committee and authorization from the participating healthcare institution. Written informed consent was obtained from parents or legal guardians, while assent was obtained from children when appropriate. Participants were informed about the study objectives, procedures, confidentiality measures, and their right to withdraw at any time without consequences. Researchers ensured that participation did not interfere with ongoing medical treatment and that all collected data remained confidential.

Data were analyzed using SPSS version 26. Descriptive statistics were used to summarize participant characteristics and study variables. Prior to inferential analysis, data normality was assessed using the Shapiro–Wilk test because the sample size was below 100 participants. The results indicated that FCC scores ($p = 0.112$) and anxiety scores ($p = 0.087$) were normally distributed. Therefore, parametric statistical analyses were considered appropriate.

Bivariate analysis was conducted using the Pearson Product Moment correlation test to examine the association between FCC and anxiety levels. Subsequently, simple linear regression analysis was performed to estimate the predictive relationship between FCC and anxiety levels. Statistical significance was established at $p < 0.05$. Regression coefficients were reported together with their 95% confidence intervals (95% CI) to provide information regarding the precision and reliability of the estimated effects.

RESULTS

This section presents the findings of the study regarding the implementation of Family-Centered Care (FCC) and anxiety levels among children with chronic illnesses. The results are organized into three parts: respondent characteristics, descriptive analysis of the main study variables, and inferential statistical analyses examining the relationship and predictive association between FCC and children's anxiety levels. Descriptive statistics are presented to provide an overview of participant demographics and study variables, while correlation and regression analyses are used to evaluate the magnitude and direction of the association between FCC implementation and anxiety outcomes.

1. Respondent Characteristics

This study involved 80 children with chronic illnesses undergoing treatment in a hospital's pediatric ward. Respondent characteristics included age, gender, type of chronic illness, and duration of chronic illness.

Table 1. Frequency Distribution of Respondent Characteristics (n=80)

Respondent Characteristics	Frequency (f)	Percentage (%)
Age		
6–9 years	22	27.5
10–13 years	31	38.8
14–18 years	27	33.7
Gender		
Male	44	55.0
Female	36	45.0
Types of Chronic Diseases		
Thalassemia	25	31.2
Type 1 Diabetes Mellitus	16	20.0
Childhood Cancer	18	22.5
Chronic Kidney Disease	11	13.8
Chronic Asthma	10	12.5
Long-term illness		
3–12 months	19	23.8
1–3 years	37	46.2
>3 years	24	30.0

Based on Table 1, it is known that the majority of respondents were in the 10–13 year age group (31 children) (38.8%). Based on gender, the majority of respondents were male (44 children) (55.0%). The most common type of chronic disease experienced by respondents was thalassemia (25 children) (31.2%), while the majority of respondents had suffered from chronic disease for 1–3 years (37 children) (46.2%). These results indicate that school-age children and early adolescents were the dominant groups undergoing chronic disease treatment in this study.

2. Univariate Analysis

Table 2. Distribution of Family-Centered Care (FCC) Levels in Children with Chronic Illness (n=80)

FCC Level	Frequency (f)	Percentage (%)
Good	48	60.0
Fair	23	28.8
Poor	9	11.2
Total	**80**	**100**

Table 2 shows that the majority of respondents (48 respondents or 60.0%) rated the implementation of Family-Centered Care (FCC) as good. Meanwhile, 23 respondents (28.8%) rated FCC as adequate, and 9 respondents (11.2%) rated FCC as inadequate. These results indicate that the majority of families felt the involvement and support of healthcare professionals throughout their child's care.

Table 3. Distribution of Anxiety Levels in Children with Chronic Illnesses (n=80)

Anxiety Level	Frequency (f)	Percentage (%)
Mild anxiety	21	26.2
Moderate anxiety	39	48.8
Severe anxiety	20	25.0
Total	**80**	**100**

Table 3 shows that the majority of children experienced moderate levels of anxiety, as many as 39 respondents (48.8%). Twenty-one respondents (26.2%) experienced mild anxiety, and 20 respondents (25.0%) experienced severe anxiety. These findings indicate that anxiety remains a significant psychological issue in children with chronic illnesses during treatment.

Table 4. Mean Family-Centered Care Scores and Children's Anxiety Levels (n=80)

Variables	Mean	Standard Deviation	Min–Max
Family-Centered Care (FCC)	72.46	8.21	50–89
Child Anxiety Level	41.37	9.54	22–65

Table 4 shows that the average Family-Centered Care (FCC) score was 72.46 with a standard deviation of 8.21. Meanwhile, the average child anxiety level was 41.37 with a standard deviation of

9.54. These values indicate that the overall implementation of FCC is in the fairly good category, while the child anxiety level is still in the moderate category.

3. Bivariate Analysis

Table 5. Relationship between Family-Centered Care (FCC) and Children's Anxiety Levels in Chronic Illnesses (n=80)

Variables	r	p-value	Information
Family-Centered Care (FCC) on Children's Anxiety Levels	-0.621	0,000	Significant

Based on the results of the bivariate analysis using the Pearson Product Moment test, a correlation coefficient (r) value of -0.621 was obtained with a p-value of 0.000 ($p<0.05$). These results indicate a significant relationship between Family-Centered Care (FCC) and anxiety levels in children with chronic illnesses. The negative correlation value indicates that the better the implementation of FCC, the lower the level of anxiety experienced by children. The strength of the relationship is in the strong category, so FCC has a significant contribution to the psychological condition of children during treatment for chronic illnesses.

Table 6. Analysis of the Effect of Family-Centered Care on Children's Anxiety Levels Using Simple Linear Regression

Variables	B	Beta	t	Sig.
Constant	68.214	–	9.832	0.000
Family-Centered Care (FCC)	-0.371	-0.621	-7.124	0.000

Model Summary	Mark
R	0.621
R Square	0.386
Adjusted R Square	0.378

The results of a simple linear regression analysis indicate that Family-Centered Care (FCC) has a significant effect on the anxiety level of children with chronic illnesses with a significance value of 0.000 ($p<0.05$). The regression coefficient value of -0.371 indicates that every one unit increase in the FCC score will decrease the child's anxiety score by 0.371 points. The R Square value of 0.386 indicates that FCC is able to explain 38.6% of the influence on the child's anxiety level, while the remaining 61.4% is influenced by other factors outside the study such as disease conditions, hospitalization experience, social support, and individual characteristics of the child.

DISCUSSION

This discussion interprets the study findings in relation to relevant theoretical frameworks and previous empirical evidence concerning Family-Centered Care and psychosocial outcomes among children with chronic illnesses. Rather than merely reiterating statistical results, the discussion focuses on explaining the possible mechanisms underlying the observed associations, comparing the findings with previous studies, and highlighting their implications for pediatric nursing practice. Furthermore, practical implications and study limitations are discussed to provide a comprehensive understanding of the significance and applicability of the findings within pediatric healthcare settings.

1. Interpretation of Family-Centered Care Implementation

The findings indicate that Family-Centered Care (FCC) has been implemented at a relatively favorable level within the pediatric services included in this study. This result suggests that healthcare professionals have increasingly recognized the importance of involving families as active partners in the care process of children with chronic illnesses. The implementation of FCC reflects a shift from the traditional provider-centered model toward a collaborative care approach that acknowledges the family as an essential component of pediatric healthcare.

Theoretically, FCC is grounded in the principles of dignity and respect, information sharing, participation, and collaboration as promoted by the Institute for Patient- and Family-Centered Care. Through these principles, families are encouraged to participate in decision-making processes, communicate openly with healthcare professionals, and contribute actively to the child's treatment and recovery. Such an approach is particularly important in chronic illness management because children frequently require long-term treatment and continuous psychosocial support.

The present findings are consistent with the systematic review conducted by Hodgson et al. (2024), which reported that FCC interventions improved family engagement, parental confidence, and psychosocial outcomes in hospitalized pediatric populations. Similarly, Chow et al. (2024) identified that effective FCC implementation is associated with improved healthcare experiences and stronger partnerships between healthcare professionals and families. These studies collectively suggest that FCC has become an increasingly important component of quality pediatric healthcare.

Nevertheless, variations in FCC implementation remain evident across healthcare settings. Alqarawi and Alhalal (2024) reported that despite positive attitudes toward FCC among nurses, actual implementation often varies because of staffing limitations, workload pressures, organizational barriers, and differences in communication competencies. Similar factors may explain why some families in the present study perceived FCC implementation less favorably than others.

From a practical perspective, the findings indicate that successful FCC implementation requires not only individual commitment from healthcare professionals but also organizational support. Adequate staffing levels, continuous professional development, family education programs, and institutional policies that promote family participation are essential to ensuring that FCC principles are consistently applied across pediatric healthcare services.

2. Interpretation of Anxiety Among Children with Chronic Illnesses

Anxiety remains a significant psychosocial challenge among children living with chronic illnesses. Chronic conditions expose children to repeated hospitalizations, invasive procedures, uncertainty regarding treatment outcomes, disruptions in daily activities, and prolonged dependence on caregivers. These experiences may generate emotional distress and contribute to persistent anxiety symptoms throughout the treatment process.

The biopsychosocial model provides a useful framework for understanding these findings. Biological factors such as chronic pain and treatment-related side effects interact with psychological factors, including fear and uncertainty, as well as social factors such as separation from peers and restrictions in normal childhood activities. Consequently, children with chronic illnesses often experience greater psychological vulnerability compared with their healthy peers.

The present findings are supported by Correale et al. (2021), who reported elevated anxiety symptoms among children with chronic health conditions. Similarly, Vega-Fernández et al. (2022) and Nibras et al. (2022) identified anxiety as one of the most common psychological comorbidities among pediatric patients with chronic diseases. Bibliometric evidence presented by Cimke et al. (2024) further confirms that anxiety remains one of the most frequently investigated psychological outcomes in pediatric chronic illness research, emphasizing its clinical importance.

3. Relationship Between Family-Centered Care and Anxiety Levels

The significant negative association identified between FCC and anxiety levels suggests that greater family involvement and collaboration within healthcare services are associated with lower anxiety among children with chronic illnesses. This finding supports the central premise of FCC that family presence and participation can positively influence children's psychological well-being during treatment.

Attachment Theory proposed by Bowlby provides a theoretical explanation for this relationship. According to this theory, children derive emotional security from attachment figures, particularly parents. When children encounter stressful situations such as hospitalization and medical treatment, the presence and support of parents can serve as a protective factor that reduces fear, uncertainty, and emotional distress. FCC facilitates this process by encouraging active family participation throughout care delivery.

The findings are consistent with Hodgson et al. (2024), who reported reductions in anxiety and stress among pediatric patients and their families following FCC interventions. Mardhiyah et al. (2022) similarly concluded that family empowerment strategies contribute to improved psychological adjustment among children with chronic illnesses. Furthermore, Willemen et al. (2022) highlighted the important role of parental involvement in strengthening emotional regulation and adaptive coping mechanisms in children facing chronic health challenges. The pilot study conducted by Marston et al. (2025) also demonstrated that structured FCC interventions improved family functioning and reduced psychological distress among families of critically ill children.

Taken together, these studies support the interpretation that FCC may contribute to improved psychological adaptation by strengthening emotional security, facilitating effective communication, and enhancing social support throughout the healthcare experience.

4. Practical Implications for Pediatric Nursing

The findings of this study have several important implications for pediatric nursing practice. First, healthcare institutions should prioritize policies that support meaningful family participation throughout the care continuum. Families should be encouraged to participate in treatment discussions, care planning, and decision-making processes whenever appropriate.

Second, pediatric nurses should receive continuous training in therapeutic communication, family engagement, and psychosocial assessment. These competencies are essential for establishing effective partnerships with families and ensuring successful implementation of FCC principles in clinical practice.

Third, FCC should be integrated into institutional quality improvement initiatives and clinical practice guidelines. Given the observed association between FCC and lower anxiety levels, strengthening FCC implementation may represent an effective non-pharmacological strategy for supporting the psychological well-being of children with chronic illnesses.

5. Study Limitations

Several limitations should be considered when interpreting the findings of this study. First, the cross-sectional design captures exposure and outcome simultaneously and therefore does not allow causal inferences regarding the relationship between FCC and anxiety levels. Second, the use of purposive sampling may limit the generalizability of the findings to broader pediatric populations and healthcare settings. Third, all measurements relied on self-reported responses, which may be subject to response bias and social desirability bias. Finally, the study was conducted in a single healthcare institution, and differences in organizational culture and healthcare resources may influence FCC implementation across settings.

Future studies are encouraged to employ longitudinal, multicenter, and intervention-based designs to further investigate the temporal relationships between FCC implementation and psychosocial outcomes among children with chronic illnesses.

CONCLUSIONS

This study found that Family-Centered Care was generally implemented at a favorable level among children with chronic illnesses receiving treatment in a pediatric healthcare setting. Anxiety remained a common psychosocial concern among participants, indicating the need for continued psychological support during long-term treatment.

The findings demonstrated a significant negative association between Family-Centered Care and anxiety levels. Children whose families reported higher levels of involvement, communication, and collaboration with healthcare professionals tended to experience lower levels of anxiety. Furthermore, FCC emerged as a significant predictor of anxiety scores and explained a substantial proportion of the observed variability in anxiety outcomes.

However, because this study employed a cross-sectional design, the findings should be interpreted as evidence of association rather than causation. Future longitudinal and intervention-based studies are required to further clarify the temporal and causal relationships between FCC implementation and psychological outcomes in children with chronic illnesses.

Overall, the results support the importance of strengthening Family-Centered Care practices within pediatric nursing services as part of a comprehensive strategy to improve psychosocial well-being among children living with chronic illnesses.

REFERENCES

Alqarawi, N., & Alhalal, E. (2024). Nurses' practices of children and family-centered care for chronically ill children: A cross-sectional study. *Journal of Pediatric Nursing*, *77*, 172–179. https://doi.org/10.1016/j.pedn.2024.03.030

Ay, A., Semerci, R., & Erkul, M. (2023). Prediction of family-centered care on the unmet care needs of parents of pediatric oncology patients and their psychosocial problems. *Pediatric Blood & Cancer*, *71*(2). https://doi.org/10.1002/pbc.30795

Carrington, L., Hale, L., Freeman, C., Qureshi, A., & Perry, M. (2021). Family-Centred Care for Children with Biopsychosocial Support Needs: A Scoping Review. *Disabilities*, *1*(4), 301–330. https://doi.org/10.3390/disabilities1040022

Chow, A. J., Saad, A., Al-Baldawi, Z., Iverson, R., Skidmore, B., Jordan, I., Pallone, N., Smith, M., Chakraborty, P., Brehaut, J., Cohen, E., Dyack, S., Gillis, J., Goobie, S., Greenberg, C. R., Hayeems, R., Hutton, B., Inbar-Feigenberg, M., Jain-Ghai, S., & Khangura, S. (2024). Family-centred care interventions for children with chronic conditions: A scoping review. *Health Expectations*, *27*(1). https://doi.org/10.1111/hex.13897

Cimke, S., Gurkan, D. Y., & Polat, S. (2024). Research on Family-Centered Care in pediatric patients: A Bibliometric Analysis. *Journal of Pediatric Nursing*, *76*, 199–206. https://doi.org/10.1016/j.pedn.2024.02.017

Correale, C., Di Pastena, M., Tondo, I., Milo, F., Santato, F., Amodeo, G., Capitello, T. G., Vigevano, F., & Cappelletti, S. (2021). Prevalence of depressive and anxiety symptoms in chronically ill children and adolescents during COVID-19 pandemic and lockdown: Preliminary findings of a pediatric hospital in Italy. *European Psychiatry*, *64*(S1), S272–S272. https://doi.org/10.1192/j.eurpsy.2021.731

Franck, L. S., Mehra, R., Hodgson, C. R., Gay, C., Rienks, J., Lisanti, A. J., Pavlik, M., Manju, S., Turaga, N., Clay, M., & Hoffmann, T. J. (2025). Prevalence of Depression and Anxiety Symptoms Among Parents of Hospitalized Children in 14 Countries. *Children*, *12*(8), 1001. https://doi.org/10.3390/children12081001

Hodgson, C. R., Mehra, R., & Franck, L. S. (2024). Child and Family Outcomes and Experiences Related to Family-Centered Care Interventions for Hospitalized Pediatric Patients: A Systematic Review. *Children*, *11*(8), 949–949. https://doi.org/10.3390/children11080949

Huang, Y., Pan, Y., Chen, M., Jiang, H., Ren, L., Wang, Y., Zhang, L., & Dong, C. (2022). The resilient process of the family after diagnosis of childhood chronic illness: a qualitative meta-synthesis. *Journal of Pediatric Nursing*, *67*, e180–e190. https://doi.org/10.1016/j.pedn.2022.07.017

Khotimah, K., Wijayanti, F., & Devi O, N. (2024). Penerapan Family Centered Care terhadap kecemasan pasien hospitalisasi pada anak. *Health Sciences and Pharmacy Journal*, *8*(2), 89–96. https://doi.org/10.32504/hspj.v8i2.1126

Mardhiyah, A., Panduragan, S. L., & Mediani, H. S. (2022). Reducing Psychological Impacts on Children with Chronic Disease via Family Empowerment: A Scoping Review. *Healthcare*, *10*(10), 2034. https://doi.org/10.3390/healthcare10102034

Marshall, K. H., Pincus, H. A., Tesson, S., Lingam, R., Woolfenden, S. R., & Kasparian, N. A. (2022). Integrated psychological care in pediatric hospital settings for children with complex chronic illness and their families: a systematic review. *Psychology & Health*, *39*(4), 1–27. https://doi.org/10.1080/08870446.2022.2072843

Marston, M. T., Perez, M., & Ramelet, A. (2025). The OCTO -Plus Intervention to Support Families of Chronically Critically Ill Children in Paediatric Critical Care: A Pilot Study. *Nursing in Critical Care*, *31*(1). https://doi.org/10.1111/nicc.70294

Nibras, S., Kentor, R., Masood, Y., Price, K., Schneider, N. M., Tenenbaum, R. B., & Calarge, C. (2022). Psychological and Psychiatric Comorbidities in Youth with Serious Physical Illness. *Children*, *9*(7), 1051. https://doi.org/10.3390/children9071051

Punaglom, N., Tungpaibool, P., Sansuriwong, P., Kaewkerd, O., & Boobpamala, S. (2022). Integrative Review for a Family-centered Care Intervention to Promote Family Functioning in Families Living with Children with Chronic Illness. *The Bangkok Medical Journal*, *18*(2), 131–140. https://doi.org/10.31524/bkkmedj.2022.23.001

Smith, B. M., Sharma, R., Das, A., Aboumatar, H., Pitts, S. I., Day, J., Holzhauer, K., Bass, E., & Bennett, W. L. (2021). Patient and family engagement strategies for children and adolescents with chronic diseases: A review of systematic reviews. *Patient Education and Counseling*, *104*(9). https://doi.org/10.1016/j.pec.2021.02.026

Willemen, A. M., Kuzminskaite, E., Maurice-Stam, H., Grootenhuis, M. A., Last, B. F., Schuengel, C., & Scholten, L. (2022). The Working Mechanisms of Parental Involvement in Interventions for Children with Chronic Illness. *Journal of Child and Family Studies*, *31*. https://doi.org/10.1007/s10826-022-02329-7