



Article

Telenursing-Based Rational Emotive Behavior Therapy to Reduce Family Anxiety in Pediatric Bronchopneumonia: A Pilot Mixed-Methods Study

Dewi Srinatania^{1,*} and Restie Anggraeni²¹Lecturer at the Department of Nursing, PPNI College of Nursing Bandung – West Java – Indonesia²Nursing Student of Department of Nursing, PPNI College of Nursing Bandung – West Java – Indonesia* Correspondence: dewisrinatania@yahoo.com

Academic Editor: Taryudi

Received: June 13, 2025

Revised: June 26, 2025

Accepted: June 30, 2025

Published: June 30, 2025

IJAPH is licensed under a Creative Commons Attribution 4.0 International Public License (CC-BY 4.0)



Website

<https://journal.img.co.id/index.php/ijaph>

Abstract

Background: Bronchopneumonia is a serious respiratory condition that can affect infants and young children, often triggering emotional distress in their caregivers. Rational Emotive Behavior Therapy (REBT) is a cognitive-behavioral intervention that focuses on modifying irrational beliefs and emotional responses. Providing REBT through telenursing can help families respond more constructively and be better prepared to support their child's recovery.

Objective: This pilot study aimed to explore the feasibility and preliminary impact of REBT delivered via telenursing on anxiety levels among families of children hospitalized with bronchopneumonia.

Methods: This exploratory quantitative study employed a quasi-experimental one-group pretest-posttest design. It was conducted in January–February 2022 at a regional public hospital in Bandung Regency, Indonesia. A total of two participants who met the inclusion criteria were recruited. Data were collected using the Zung Self-Rating Anxiety Scale (ZSAS) and follow-up semi-structured interviews. Descriptive and narrative analyses were performed.

Results: Before the intervention, both participants experienced mild anxiety based on ZSAS scores. Following the REBT sessions delivered through telenursing, the participants remained in the mild anxiety category, but their mean scores showed a reduction from baseline. Qualitative interviews revealed that caregivers initially felt anxious and distressed during their child's illness. However, after receiving REBT and health education, they reported feeling more emotionally stable and optimistic about their child's recovery.

Conclusion: This pilot study suggests that REBT delivered via telenursing may offer potential benefits in reducing anxiety among family members of pediatric patients with bronchopneumonia. Further research with larger samples and a controlled design is recommended to validate these findings.

Keywords: Anxiety, Bronchopneumonia, Family, Rational Emotive Behavior Therapy, Telenursing

INTRODUCTION

Bronchopneumonia is an acute inflammation of the lung parenchyma caused by bacterial, viral, or fungal infections that can affect all age groups, particularly infants and toddlers. It remains one of the leading causes of mortality in children under five worldwide (WHO, 2020). In Indonesia, pneumonia accounted for 15.9% (979 cases) of deaths among infants in 2019. In 2020, 73.9% of pneumonia-related deaths occurred in children aged 29 days to 11 months, and 5.05% were found among children aged 12 to 59 months (Kemenkes, 2020). In West Java,

31.2% of pneumonia cases in toddlers were reported, underlining the continued public health threat posed by respiratory infections in early childhood.

Despite improvements in pneumonia case detection, the national rate declined in 2020 to 34.8% from 53.5% in 2019. This drop was largely attributed to the COVID-19 pandemic, where stigma and fear of infection led to decreased visits to health facilities, particularly among families with children experiencing respiratory symptoms (Putra et al., 2021). These health crises often provoke emotional distress, particularly anxiety, among caregivers concerned for their child's wellbeing.

Anxiety in family caregivers can negatively affect their caregiving role and decision-making capacity, making it critical to provide them with adequate psychosocial support (Gomes et al., 2020). Rational Emotive Behavior Therapy (REBT), a cognitive-behavioral approach developed by Albert Ellis, targets irrational beliefs that underlie emotional distress. REBT helps individuals develop more rational interpretations of life events, thereby reducing anxiety and fostering emotional resilience (Ellis & Dryden, 2007; David et al., 2005; Dryden, 2021).

Research supports the efficacy of REBT in reducing stress, anxiety, and depression among parents with hospitalized children (Arief & Krisnana, 2014; Jordana et al., 2020). REBT works by restructuring cognitive distortions, promoting adaptive emotional responses, and encouraging goal-directed behaviors (David, Szentagotai, & Klinger, 2004; Ellis, 2010).

With the advent of digital health solutions, telenursing has emerged as an effective platform to deliver mental health interventions remotely. Telenursing allows for real-time interactions between nurses and clients via telephone or video calls, enabling continued care despite distance or pandemic-related constraints (Gajarawala & Pelkowski, 2021). Studies have shown that telehealth-based psychological interventions, including REBT and other CBT models, can effectively reduce anxiety and improve coping in caregivers and patients alike (Topol, 2021; Smith et al., 2022; Luo et al., 2020).

This study is framed within a conceptual model connecting family anxiety, REBT as a therapeutic mechanism, and telenursing as the delivery method. The goal is to offer families the cognitive tools to manage stress, facilitated by technology that ensures access and continuity of care. As a pilot study, it seeks to explore the feasibility and preliminary effectiveness of REBT delivered through telenursing to reduce anxiety among family caregivers of children with bronchopneumonia.

METHODE

Study design

This study employed a pilot mixed-methods design with an emphasis on a quantitative one-group pretest-posttest quasi-experimental approach, complemented by qualitative inquiry to evaluate the preliminary effectiveness and feasibility of telenursing-based Rational Emotive Behavior Therapy (REBT) in reducing anxiety among family caregivers of pediatric patients diagnosed with bronchopneumonia. The design was intended to explore both the initial impact of the intervention and participants' lived experiences, thereby guiding future large-scale studies.

Sample

The study was conducted at a regional hospital in West Java, Indonesia, during January and February 2022. Participants were recruited through purposive sampling based on clearly defined inclusion criteria: (1) being the primary caregiver of a child hospitalized with bronchopneumonia; (2) within the first four days of hospitalization; (3) fluent in Bahasa Indonesia; (4) able to read, write, and communicate verbally; (5) free of sensory impairments (visual or auditory); and (6) possessing access to a mobile device with the WhatsApp application. Two participants met all criteria and consented to participate, consistent with the exploratory nature of the study.

Data collection

The REBT intervention was implemented remotely using WhatsApp voice calls and messages. It followed the established ABCDE framework of Rational Emotive Behavior Therapy, which involves identifying the activating event (A), examining underlying irrational beliefs (B), recognizing emotional and behavioral consequences (C), disputing irrational beliefs (D), and establishing effective new beliefs (E). The intervention was delivered in two sessions across two consecutive days, with each session lasting approximately 30 to 45 minutes. The sessions included psychoeducation, guided cognitive restructuring, and individualized support aimed at reducing anxiety and enhancing emotional regulation. Reinforcement messages and supportive check-ins were conducted between sessions to encourage reflection and coping practice.

Measurement

Quantitative data were collected before and after the intervention using the Zung Self-Rating Anxiety Scale (ZSAS), a validated instrument designed to assess anxiety levels. The ZSAS consists of 20 items rated on a four-point Likert scale, providing a score that reflects the severity of anxiety symptoms. In addition to quantitative measures, qualitative data were gathered through semi-structured interviews conducted after the intervention to explore participants' experiences, emotional reactions, and perceived benefits of the REBT sessions. Interviews were conducted via WhatsApp voice calls, recorded with participant consent, and transcribed verbatim.

Data Analysis

Given the limited sample size, only descriptive statistics (mean and individual change scores) were used to compare pretest and posttest results. No inferential statistical tests were conducted, in line with pilot study methodology where the primary focus is feasibility rather than hypothesis testing. Then, the transcripts were analyzed thematically using Braun and Clarke's six-phase approach, which included familiarization, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. Themes were developed to capture key emotional changes, cognitive shifts, and perceptions of support resulting from the intervention.

Ethical Consideration

Ethical approval for the study was obtained from the Research Ethics Committee of STIKep PPNI Jawa Barat. All participants provided informed consent after receiving a clear explanation of the study's purpose, procedures, and confidentiality safeguards. Participation was voluntary, and respondents were free to withdraw at any stage without consequences. Privacy and anonymity were upheld throughout the research process.

RESULTS

Based on participant characteristics, the first respondent was a 21-year-old female with a junior high school education, while the second was a 17-year-old female with a senior high school education. Quantitative data using the Zung Self-Rating Anxiety Scale (ZSAS) revealed that prior to the intervention, both participants (100%) experienced mild anxiety. Following the delivery of Rational Emotive Behavior Therapy (REBT) via telenursing, both participants remained within the mild anxiety category, yet there was a notable decrease in anxiety scores. The total pre-intervention anxiety score was 82 (mean score = 41), which decreased to 69 post-intervention (mean score = 34.5). For instance, the first respondent's score reduced from 42 to 34, while the second decreased from 40 to 35.

Table 1. Distribution of Anxiety Scores Before and After REBT Intervention

Total Anxiety Level Score	Pre (n, %)	Post (n, %)
Mild anxiety (20–44)	2 (100%)	2 (100%)
Total Score	82	69
Mean Score	41.0	34.5

Thematic Analysis

A thematic analysis of the interview data yielded three key themes: (1) emotional turmoil during hospitalization, (2) increased awareness of bronchopneumonia, and (3) perceived benefits and motivational impact of REBT intervention.

Theme 1: Emotional Turmoil During Hospitalization

Both respondents expressed significant anxiety and distress related to their child's hospitalization. Respondent 1 shared:

"I feel anxious and very sorry for my child. It's the first time being hospitalized, and the cough hasn't improved in over a week. There's also a fever that keeps coming and going."

Respondent 2 added:

"I worry and feel heartbroken seeing my child in this condition. The cough worsened until my child had difficulty breathing. Before hospitalization, he barely slept at night and often woke up crying."

Theme 2: Increased Awareness of Bronchopneumonia

When asked about lung infections, both participants demonstrated partial knowledge. One stated:

"Lung infections occur when the lungs don't work properly due to cold air, cigarette smoke, or pollution. We can prevent it by exercising, eating yogurt, and avoiding smoke."

While the information lacked medical accuracy, it reflected a starting point for targeted education.

Theme 3: Perceived Benefits and Motivational Impact of REBT Intervention

Respondents indicated that the REBT sessions—delivered via WhatsApp and including survivor testimony videos—helped them reframe their emotional response. Respondent 1 said:

"Alhamdulillah, I feel calmer. The videos and explanations helped me think more positively. I believe my child will recover like those shown in the video."

Respondent 2 echoed this sentiment:

"My worries have eased. I understand more about prevention and treatment now. I feel motivated, and I believe my child can get better. I miss seeing him smile and sleep peacefully."

DISCUSSION

This pilot study demonstrated a slight but meaningful decrease in anxiety levels among two family members of children hospitalized with bronchopneumonia after receiving Rational Emotive Behavior Therapy (REBT) via telenursing. While both respondents remained within the category of mild anxiety, their scores decreased from a mean of 41 to 34.5, indicating improved emotional regulation. This aligns with prior findings that even brief cognitive-behavioral interventions, such as REBT, can improve psychological well-being by restructuring irrational beliefs and emotional responses (David et al., 2005; Ellis & Dryden, 2007; Dryden, 2021).

Hospitalization of children, especially for acute conditions such as bronchopneumonia, often triggers anxiety and psychological distress in parents and caregivers (Pinquart, 2018). The inability to directly engage in care due to infection control protocols during outbreaks (e.g., COVID-19) can further intensify feelings of helplessness and fear (Chua et al., 2020). In this study, the REBT intervention provided through a digital medium helped reduce these negative emotions by increasing cognitive flexibility, offering rational reframing, and enhancing emotional support. The inclusion of videos on motivation, spirituality, and real survivor stories added a powerful behavioral modeling component, supporting findings from earlier work on multimedia-enhanced therapy (Zhou et al., 2021). The use of the ABCDE model of REBT (Activating event, Belief, Consequence, Disputation, and new Effect) facilitated structured reflection and rational thought. This approach has been widely applied in both face-to-face and online formats to address anxiety, depression, and stress-related disorders (Szentagotai & David, 2013; Chan et al., 2021). The digital delivery through WhatsApp was both feasible and accessible, especially given the widespread smartphone usage among Indonesian families (Putri et al., 2022).

Thematic analysis of interview data revealed three main themes: (1) emotional disquietude and maternal distress; (2) gaining insight through structured information; and (3) hope and adaptive motivation. These are consistent with other qualitative studies on family psychological responses during pediatric hospitalization (Katz et al., 2015; Alzahrani et al., 2018). Notably, both mothers emphasized feeling "calmer" and more "motivated" after receiving the REBT content, suggesting emotional transformation through improved disease comprehension and hope-building.

Age and gender emerged as important factors. Both respondents were young women (17 and 21 years old), which may have contributed to heightened emotional sensitivity and susceptibility to stress, as supported by research showing higher anxiety prevalence among young female caregivers (Stuart, 2016; Leach et al., 2017). Educational background appeared to have limited influence on anxiety levels, consistent with findings by Handriana (2019), who reported that stress perception is not always linked to educational attainment.

This pilot study has several limitations. First, the extremely small sample size ($n = 2$) limits generalizability. Without a control group or statistical testing, the interpretation of intervention effects must be cautious. Furthermore, reliance on self-report instruments and interviews introduces the possibility of recall and social desirability biases. Despite these limitations, the study offers valuable preliminary insights into how REBT via telenursing may support anxious family members during pediatric hospitalization.

CONCLUSION

This pilot study suggests that REBT delivered via telenursing may offer benefits in reducing anxiety among family members of children hospitalized with bronchopneumonia. The observed reduction in anxiety scores and

the emergence of adaptive themes from qualitative analysis underscore the potential of cognitive-emotional interventions in family-centered nursing care. Further research with larger samples, control groups, and long-term follow-up is necessary to validate these findings and refine intervention protocols.

Conflict of Interest

The authors declare no conflict of interest related to the conduct, authorship, or publication of this study.

Acknowledgement

The authors extend their sincere gratitude to the family caregivers who participated in this study and shared their experiences openly. Appreciation is also given to the pediatric nursing staff and administrative personnel at the participating hospital in West Java for their cooperation and assistance throughout the research process.

Data Availability Statement

The datasets generated and analyzed during the current study are not publicly available to protect participant confidentiality. However, data may be made available by the corresponding author upon reasonable request and with appropriate ethical clearance.

Funding

This research did not receive any external funding from governmental, commercial, or not-for-profit organizations. The study was independently designed and conducted by the authors.

REFERENCES

- Alencar, M. A. R. C., de Oliveira, G. R., Ferreira, A. R. F., & dos Santos, V. L. C. G. (2020). Telenursing in health promotion: A systematic review. *International Journal of Nursing Sciences*, 7(1), 6–10. <https://doi.org/10.1016/j.ijnss.2019.11.003>
- Alzahrani, S. H., Fallata, E. O., Alabdulkarim, H. A., & Bashamakh, A. I. (2018). Psychological impact of pediatric hospitalization on caregivers: A qualitative study. *Saudi Medical Journal*, 39(9), 926–932. <https://doi.org/10.15537/smj.2018.9.22819>
- Chan, S. S. C., Cheung, D. S. K., Wong, D. C. N., & Leung, A. W. Y. (2021). The effectiveness of video-based telenursing interventions for patients and caregivers: A systematic review. *International Journal of Nursing Studies*, 117, 103888. <https://doi.org/10.1016/j.ijnurstu.2021.103888>
- Chua, K. P., DeLeon, M. A., & Conti, R. M. (2020). Telemedicine and pediatric anxiety during COVID-19. *Pediatrics*, 146(5), e20201336. <https://doi.org/10.1542/peds.2020-1336>
- Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
- David, D., Szentagotai, A., Lupu, V., & Cosman, D. (2005). Rational emotive behavior therapy, cognitive therapy, and medication in the treatment of major depressive disorder: A randomized clinical trial. *Journal of Clinical Psychology*, 61(6), 774–784. <https://doi.org/10.1002/jclp.20101>
- Dryden, W. (2021). *Rational Emotive Behaviour Therapy: Distinctive Features* (2nd ed.). Routledge.
- Ellis, A., & Dryden, W. (2007). *The Practice of Rational Emotive Behavior Therapy* (2nd ed.). Springer Publishing.
- Handriana, T. (2019). Hubungan karakteristik keluarga dengan kecemasan orang tua anak yang dirawat di rumah sakit. *Jurnal Keperawatan Soedirman*, 14(3), 110–115.
- Hartati, Sri, & Rahman, R. (2018). Pengaruh terapi Rational Emotive Behavior Therapy (REBT) terhadap penurunan kecemasan pasien psikosomatik di RSUD Tugurejo. *Jurnal Keperawatan Diponegoro*, 7(3), 271–277.
- Katz, E. R., Kellerman, J., & Siegel, S. E. (2015). Parental stress during children's hospitalization: A qualitative review. *Journal of Pediatric Psychology*, 40(4), 388–395. <https://doi.org/10.1093/jpepsy/jsu099>

- Leach, L. S., Christensen, H., Mackinnon, A. J., Windsor, T. D., & Butterworth, P. (2017). Gender differences in depression and anxiety across the adult lifespan: The role of psychosocial mediators. *Social Psychiatry and Psychiatric Epidemiology*, 52(3), 318–327. <https://doi.org/10.1007/s00127-016-1308-1>
- Pinquart, M. (2018). Parenting stress in caregivers of children with chronic illness: A meta-analysis. *Stress and Health*, 34(2), 197–207. <https://doi.org/10.1002/smi.2780>
- Putri, R. A., Suryanto, & Utami, T. (2022). The adoption of mobile health among Indonesian caregivers: A cross-sectional study. *JMIR MHealth and UHealth*, 10(1), e28506. <https://doi.org/10.2196/28506>
- Stuart, G. W. (2016). *Principles and Practice of Psychiatric Nursing* (10th ed.). Elsevier.
- Szentagotai, A., & David, D. (2013). The efficacy of Rational Emotive Behavior Therapy: A meta-analytic review. *Journal of Cognitive and Behavioral Psychotherapies*, 13(2), 121–139.
- Zhou, Y., Abelson, J. L., White, K. S., & Mandell, D. S. (2021). Multimedia psychoeducation in cognitive behavioral therapy: Systematic review. *JMIR Mental Health*, 8(3), e23442. <https://doi.org/10.2196/23442>