

Family Empowerment for Pressure Ulcer Prevention in Bedridden Patients at Home in Bababulo Village

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ABSTRACT

Pressure ulcers are a common and serious health problem among bedridden patients receiving home care, often leading to complications that deteriorate their condition. This community service program aimed to empower families as primary caregivers in preventing pressure ulcers through structured education and practical mentoring. The intervention involved 30 family caregivers and was implemented in two sessions consisting of education and hands-on practice, conducted on May 10, 2025, in Bababulo Village, Pamboang District. Knowledge evaluation was performed using a pre-test and post-test design with 15 structured questions. The results showed a substantial improvement in family knowledge, with the average score increasing from 48.3 to 89.5 after the intervention. Participants initially demonstrated limited understanding of ulcer prevention techniques but became more competent and confident following the sessions. The program not only improved knowledge and caregiving skills but also strengthened emotional engagement and collaboration within families. Despite its success, the short training duration and small sample size were identified as limitations. To ensure sustainability, it is recommended to integrate digital educational materials, continuous follow-up training, and community support networks. Overall, this initiative provides an effective and replicable model for family-based empowerment in home care, contributing to enhanced patient safety and quality of life.

Keywords: Family Empowerment; Caregiver; Pressure Ulcer; Education; Home Care.

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1. Introduction

Pressure ulcers are a significant health problem that frequently affect patients who experience long-term immobility, both in hospitals and home-care settings. Clinically, they are defined as localized injuries to the skin and underlying tissue, typically occurring over bony prominences because of prolonged pressure or shear forces (Mervis & Phillips, 2019). These ulcers not only cause severe pain but can also lead to serious complications such as infection and prolonged hospitalization, which have a substantial impact on patients' quality of life (Henkel Ferro et al., 2020). According to the World Health Organization (WHO, 2022), the global incidence of pressure ulcers remains high, particularly among older adults and individuals with chronic conditions. In Indonesia, this problem has become an increasing public health concern due to its high prevalence and the considerable burden it places on both patients and healthcare systems. Data from the Ministry of Health indicate that pressure ulcers are among the most common complications in hospitalized patients, with incidence rates ranging from 15% to 20% in various hospitals.

This condition not only extends the length of the hospitalization but also increases the overall cost of treatment, with an estimated additional cost of reaching 70% of the total cost of patient care. In this context, the role of the family becomes essential as they perform important nursing tasks such as repositioning, maintaining skin hygiene, and identifying early signs of pressure ulcers (Armanda et al., 2022; Spike, 2018). Families often act as key enablers in maintaining patient well-being and adherence to preventive care routines, although their caregiving roles may involve complex ethical and emotional challenges. However, many families lack the knowledge and skills necessary to carry out these responsibilities effectively and often experience emotional strain and caregiver burden while providing long-term care (Brodaty & Donkin, 2009).

Family empowerment through structured education and skills training is recognized as an effective strategy for enhancing the quality of home-based care (Arifin et al., 2024; Effendy et al., 2022). The empowerment process involves increasing awareness of proper care practices, strengthening emotional resilience, and providing families with the competencies needed to manage patients' health effectively. Through training, caregivers can learn essential techniques such as correct patient repositioning, maintaining skin hygiene, and recognizing early warning signs of pressure ulcers (Gupta & Addison, 2020; Mościcka et al., 2022). Engaging families in care planning and decision-making also fosters emotional connection, shared responsibility, and long-term commitment to treatment plans, which collectively contribute to better health outcomes (Pusa et al., 2019).

Recent studies support the effectiveness of educational interventions in increasing caregivers' knowledge and practical ability. Kristanto and Atmojo (2021) found a significant improvement in family knowledge and skills related to pressure ulcer prevention after structured education and mentoring, while Zuniga et al. (2024) emphasized the importance of the drill-and-practice method in strengthening behavioral change. These findings affirm that empowering caregivers is not merely about transferring knowledge but about developing confidence, responsibility, and sustained engagement in caregiving practices.

Furthermore, empowerment facilitates the development of better interpersonal and communication skills among family members, transforming them from passive caregivers into active partners in the patient's healing process. Education-based empowerment initiatives should therefore be integrated into community health strategies to ensure that patients receive comprehensive, quality care at home. Structured interventions, such as training on repositioning, skin care, and patient monitoring, can substantially improve caregiver confidence and independence (Boyko et al., 2018; Ziegler et al., 2023).

Unlike previous community service efforts that focused primarily on institutional or hospital-based prevention, this program highlights the importance of home-based family empowerment. Such a participatory and contextual approach is expected to serve as a sustainable model for community engagement. By strengthening the capacity of families as caregivers, this initiative aims to reduce the incidence of pressure ulcers, enhance patient comfort, and improve the overall well-being of both patients and their caregivers. This understanding can also serve as a reference for health workers and policymakers in developing family-centered, community-responsive intervention programs in the future.

2. Method

This community service used a pre-experimental design with a one-group pre-test and post-test approach to evaluate the improvement of family caregivers' knowledge regarding the prevention of pressure ulcers. The activity applied an educational and participatory method, emphasizing the active involvement of family members as partners in the caregiving

process. The main objective was to empower families by increasing their understanding, practical skills, and awareness related to home-based care for bedridden patients.

The program was conducted in Bababulo Village, Pamboang District, involving 30 participants who served as primary caregivers, including spouses, children, and parents of bedridden patients. Participants were selected purposively based on their direct role in providing care and their willingness to participate. The activity took place on May 10, 2025, and lasted for approximately two hours, which consisted of one hour of educational delivery and one hour of direct mentoring and practice carried out at the patients' homes.

Before the intervention, the implementation team carried out an initial assessment through observation and brief interviews to identify the conditions of patients, the caregivers' initial level of knowledge, and the potential risk factors that could contribute to pressure ulcers such as immobility, nutrition, and hygiene. The educational session included interactive lectures, demonstrations, and discussions, focusing on the understanding of pressure ulcer causes, early signs, and preventive measures such as repositioning, maintaining skin cleanliness, and ensuring adequate nutrition. To enhance understanding, the team provided visual aids and printed educational materials during the activity.

During the mentoring stage, the caregivers were guided to apply the preventive techniques directly at home under the supervision of the team, who provided feedback and encouragement to build confidence in practice. After the mentoring, a post-test questionnaire was administered to measure the improvement in knowledge after the intervention. The questionnaire consisted of 15 multiple-choice questions covering definitions, risk factors, symptoms, and prevention techniques. The instrument was validated by nursing experts prior to use. The pre-test and post-test results were analyzed using descriptive statistics, which included mean scores, frequency, and percentage, to identify changes in knowledge levels among the participants.

Ethical considerations were observed throughout the program. All participants were informed about the objectives, procedures, and voluntary nature of the activity. They were also assured that all personal data and responses would remain confidential. This structured and participatory approach not only measured the educational effectiveness of the intervention but also fostered collaboration between caregivers and health workers in improving the quality of home-based patient care.

3. Result

The community service program was implemented to improve the knowledge and awareness of family caregivers in preventing pressure ulcers through targeted education and mentoring. Evaluation was carried out using pre-test and post-test instruments consisting of 15 multiple-choice questions covering definitions, risk factors, early signs, and preventive measures of pressure ulcers.

Before the educational session, caregivers' knowledge was generally low. The average pre-test score was 48.3 out of 100, with 73 percent of participants scoring below 60. Only four participants (27 percent) had previously heard of pressure ulcers, but they were unfamiliar with effective prevention techniques. This result indicates that most caregivers lacked sufficient understanding of basic home-care practices for bedridden patients.

After the educational intervention, a significant increase in knowledge was recorded. The average post-test score increased to 89.5 out of 100, and 87 percent of participants achieved scores above 80. All participants were able to mention at least three appropriate prevention techniques, such as patient repositioning, skin hygiene maintenance, and

nutritional management. This improvement demonstrates that the educational materials were effective and easy to understand for participants from various educational backgrounds.

Aspect	Pre-Test	Post-Test
Average Score	48.3	89.5
Participants Scoring Below 60	11 (73%)	0 (0%)
Participants Scoring Above 80	0 (0%)	13 (87%)
Participants Mentioning at Least Three Prevention Techniques	4 (27%)	30 (100%)

Participants' active engagement during discussions reflected high motivation and enthusiasm to learn about patient care. Many shared their personal experiences and asked clarifying questions, indicating that the educational and participatory method successfully encouraged interaction and learning. During the implementation, the program team conducted both counseling sessions with family caregivers and practical demonstrations on pressure ulcer prevention in bedridden patients at their homes. These activities illustrated the integration of education and hands-on mentoring that characterized the empowerment model applied in this program.



a) Counseling and education session with family caregivers.



b) Practical session on pressure ulcer prevention conducted during home-based mentoring.

Figure 1. Educational and mentoring activities conducted during the family empowerment program in Bababulo Village

4. Discussion

4.1 Program Success

The findings of this study indicate that the educational intervention was highly effective in enhancing caregivers' knowledge, awareness, and confidence in preventing pressure ulcers. The substantial increase in post-test scores demonstrates that the materials and methods were relevant, comprehensible, and well-adapted to participants' learning needs. This improvement confirms that carefully structured educational programs can effectively bridge gaps in caregivers' understanding and skills, particularly in the context of home-based patient care.

This result is consistent with the work of Aiman, Saddique, and Jabeen (2024), who found that targeted education and systematic training significantly improve both nursing knowledge and clinical practice in pressure ulcer prevention. Similarly, in this program,

participants not only deepened their theoretical understanding but also demonstrated better practical competence in essential care activities such as patient repositioning, maintaining skin integrity, and identifying early warning signs. This suggests that knowledge-based interventions can directly translate into improved caregiving practices, reinforcing the critical link between education and preventive care.

From a theoretical standpoint, the findings reflect the essence of empowerment theory as articulated by Hickmann, Richter, and Schlieter (2022), who describe empowerment as a dynamic process that strengthens individuals' autonomy, self-efficacy, and active participation in health-related decisions. Within this program, caregivers were not treated as passive recipients of information but rather as partners in the caregiving process. Through participatory learning and mutual dialogue, they developed a stronger sense of responsibility and ownership in managing patient care. This transformation embodies the principle of empowerment, where individuals are supported to make informed decisions and assume active roles in improving health outcomes.

The improvement observed among participants also reflects a clear development in health literacy, which, as Vamos et al. (2020) argue, extends beyond understanding health information to include the ability to apply, communicate, and act upon it in daily life. Through interactive discussions, visual materials, and real-time mentoring, caregivers not only enhanced their comprehension but also demonstrated the capacity to make informed health decisions and translate knowledge into practical care behaviors. This finding is further supported by Visscher et al. (2018), who found that community-based health literacy interventions consistently lead to improvements in preventive behavior and self-care practices.

The implementation of the mentoring component at the patients' homes further reinforced this learning process. Conducting sessions within the caregivers' own environment allowed them to connect theoretical understanding with real caregiving experiences, facilitating experiential learning. This observation is consistent with Bahtiar et al. (2022), who emphasized that home-based educational activities enhance knowledge retention and strengthen the transfer of learning into daily caregiving routines. In addition to these cognitive and behavioral outcomes, Young (2020) highlighted that family members of patients with pressure ulcers often experience psychological distress, anxiety, and feelings of guilt during the caregiving process. Therefore, educational programs that emphasize empowerment and empathy, as implemented in this study, can also help reduce caregivers' emotional burden by promoting confidence and a sense of shared responsibility in patient care.

Overall, the success of this program lies in its ability to combine conceptual understanding, hands-on practice, and emotional engagement in a holistic educational model. By integrating the principles of empowerment and health literacy, the intervention not only improved caregivers' knowledge but also fostered sustainable behavioral change and a deeper commitment to patient well-being. When caregivers are empowered through participatory education, they become confident, capable, and compassionate partners in care, contributing to improved quality of life for both patients and their families.

4.2 Challenges and Limitations

Despite the overall success of the program, several challenges were identified during its implementation. One of the main limitations was the short duration of the educational sessions, which provided limited time for participants to fully internalize and practice the preventive care techniques. The program was conducted in only two hours, which may have

restricted deeper engagement, reflection, and skill reinforcement among caregivers. Additionally, variations in participants' educational backgrounds and learning capacities affected the level of understanding and consistency in applying the knowledge gained. Some caregivers required additional explanation or demonstration to grasp medical concepts related to pressure ulcer prevention. These observations are consistent with the findings of Taylor, Mulligan, and McGraw (2021), who identified that differences in educational preparation, resource access, and contextual support often hinder the implementation of evidence-based pressure ulcer prevention practices in community settings.

These findings are also in line with the results of Rafiei, Vanaki, Mohammadi, and Hosseinzadeh (2021), who identified similar challenges among family caregivers involved in pressure injury prevention. Their scoping review highlighted that caregivers often face barriers such as inadequate training opportunities, limited health communication with professionals, and the absence of structured educational support. The authors emphasized that family caregivers play an essential role in implementing prevention guidelines but require ongoing guidance and empowerment to do so effectively. The present findings align with this perspective, suggesting that brief, one-time training may be insufficient to address the diverse needs and experiences of family caregivers in home-care settings.

Environmental and contextual factors also contributed to the challenges encountered. Limited physical space, competing household responsibilities, and time constraints due to caregiving duties occasionally interfered with the practice components of the program. These factors highlight the importance of designing flexible and adaptable training models that accommodate the realities of caregivers' daily lives.

To address these challenges, future programs should consider integrating digital and technology-based learning resources to supplement face-to-face sessions. According to Cardoso et al. (2018), the use of educational technologies can facilitate continuous learning and provide caregivers with accessible materials that reinforce practical knowledge. Such tools enable caregivers to revisit the content as needed, allowing for independent and sustained learning beyond the initial training. The integration of video tutorials, interactive modules, and mobile learning platforms can enhance engagement and ensure that educational benefits are maintained over time.

In summary, the challenges identified in this program underscore the need for longer-duration, multi-session training models supported by flexible learning technologies. Continuous follow-up, combined with accessible digital materials, can strengthen knowledge retention and bridge the gap between theoretical understanding and consistent caregiving practice.

4.3 Recommendations and Implications

The results of this program provide valuable insights for improving future community-based family empowerment initiatives. Addressing these challenges through structured and technology-supported education can ensure both scalability and sustainability of family empowerment efforts. Building upon the achievements and challenges identified, several recommendations can be proposed to enhance both the educational process and its long-term impact.

Future programs should adopt a multi-phase training model that includes pre-training assessments, interactive learning sessions, and post-training supervision. This structure allows for continuous monitoring of caregivers' progress and creates opportunities for reflection and reinforcement of key concepts. Establishing periodic follow-up or refresher

sessions is also essential to maintain motivation and ensure the consistent application of preventive care practices among family members.

Collaboration with community health workers and local health cadres should be strengthened to facilitate ongoing mentoring and monitoring. These actors can serve as facilitators who bridge the gap between families and healthcare professionals, providing regular support and evaluation. Strengthening such partnerships also aligns with the empowerment perspective described by Hickmann, Richter, and Schlieter (2022), which views empowerment as a relational process built upon shared responsibility and collective engagement.

The integration of educational technology should be prioritized to increase accessibility and engagement in learning. As highlighted by Cardoso et al. (2018), technology-based learning tools can improve caregivers' ability to acquire and retain knowledge by offering flexible and self-paced learning opportunities. Digital resources such as video demonstrations, online platforms, and mobile applications can create interactive and supportive learning environments, like the participatory web-based education models developed by Ryu and Pratt (2025). These tools are particularly useful for caregivers with limited time or logistical constraints, enabling continuous learning and practical application of care techniques.

From both theoretical and practical perspectives, this study reaffirms the interconnectedness of empowerment and health literacy. Effective family education programs should not only transfer information but also strengthen caregivers' capacity to interpret, apply, and evaluate health-related knowledge within their daily routines. This reflects the concept proposed by Vamos, Okan, Sentell, and Rootman (2020) that health literacy represents a process of lifelong learning and participation. Policymakers and health institutions can leverage these findings to design scalable caregiver training models and integrate family empowerment into community health strategies. Ultimately, by combining participatory education, digital innovation, and local engagement, family empowerment programs can foster a more resilient and compassionate home-care ecosystem that supports both patient safety and overall family well-being.

5. Conclusion

The findings of this community service program demonstrate that family empowerment through education and mentoring is an effective approach to prevent pressure ulcers in bedridden patients at home. The intervention significantly improved caregivers' knowledge, awareness, and confidence in performing preventive care. The average knowledge score increased from 48.3 to 89.5, indicating that the educational materials and participatory approach were well understood and successfully applied in practice.

In practical terms, this program highlights the importance of involving family members as active partners in home-based patient care. By enhancing caregivers' competence and motivation, families become more capable of maintaining patient comfort and safety. The program also illustrates that community-based educational initiatives can strengthen family engagement and contribute to sustainable improvements in caregiving quality, particularly for patients requiring long-term care.

For future implementation, it is recommended to extend the training duration and incorporate digital educational media to support continuous learning and accessibility. Regular follow-up sessions, peer support groups, and collaboration with community health

cadres are also essential to ensure sustainability and long-term impact. Broader adoption of similar empowerment-based programs may serve as a model for improving health literacy and caregiving quality in other communities, ultimately enhancing patient well-being and family resilience.

6. Acknowledgements

The authors would like to express their deepest gratitude to all parties who contributed to the implementation of this community service activity. Special thanks are extended to the families and caregivers in Bababulo Village, Pamboang District, for their active participation and cooperation throughout the program.

We also extend our sincere thanks to the local health cadres and village officials for their support and assistance in ensuring the smooth implementation of this activity. Our highest appreciation goes to the academic institution STIKes Bina Bangsa Majene and the community service teams from STIKES Gema Insan Akademik and STIKES Nani Hasanuddin Makassar for their dedication, guidance, and commitment in delivering Education to improve the quality of care for bedridden patients at home.

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