

Knowledge And Attitude Of Caregivers In Preventing Pressure Ulcers Among Elderly In Kedah's Nursing Homes

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Abstract: Introduction: Caregivers play crucial role in preventing pressure ulcers (PU) among elderly in nursing homes. However, the knowledge and attitudes towards PU prevention vary among caregivers, potentially impacting patient outcomes. Aims: This study assessed the level of knowledge and attitude of caregivers regarding PU prevention in Kedah's nursing homes. Methodology: A cross-sectional study design using a stratified random sampling technique recruited 126 caregivers from 15 nursing homes in Kedah, Malaysia. Participants completed and returned a 28-items questionnaire assessing knowledge and attitudes towards PU prevention via Google Form, between October to November 2024. The data was analysed using descriptive statistics and Spearman correlation in SPSS version 27.0. Results: Findings revealed that more than half caregivers had a statistically significant level of knowledge ($M=10.75$; $SD=1.16$) ($p < 0.05$) and a positive attitude towards PU prevention ($M=2.79$; $SD=0.37$). There was no significant relationship between knowledge and attitude of caregivers in PU prevention ($r=-0.131$, $p > 0.05$). Conclusion: While most caregivers possessed good knowledge and a positive attitude, gaps remain, particularly in ensuring comprehensive knowledge for all. Strengthening educational programs is necessary to further enhance both knowledge and attitude, ensuring effective PU prevention. Future studies should explore additional factors affecting PU prevention practices and develop targeted training programs to enhance caregivers' practical application of knowledge.

Keywords: Attitude, Caregivers, Knowledge, Nursing Homes, Pressure Ulcer Prevention.

1. INTRODUCTION

The global population is aging rapidly, with World Health Organization estimating that by 2030, one in six people will be aged 60 or older [32]. In Malaysia, elderly individuals are projected to make up 15% of the population by the same year [4]. This demographic shift increases the vulnerability of older adults to complications such as pressure ulcers (PUs), particularly among those who are immobile or bedridden in nursing homes.

PUs, also known as pressure injuries or bedsores, are localized skin and tissue damage caused by prolonged pressure or friction, particularly over bony prominences [12]. PUs affect quality of life, increase healthcare costs, and can result in serious complications such as infections or death [23]. Studies reveal that 70% of PU cases occur in adults over 65 years old, with many cases arising in nursing homes [27].

Despite the availability of evidence-based guidelines, the prevalence of PUs remains high due to caregivers' varying levels of knowledge and attitudes [4]. Therefore, this study aimed to assess caregivers' knowledge and attitudes in preventing PUs among elderly residents of nursing homes in Kedah.

2. METHODOLOGY

This section details the research design, participants, measurement instruments, demographic characteristics, variables measured, validity processes, data collection procedure, ethical considerations, and data analysis methods applied in this study.

2.1 Study Design

A quantitative, cross-sectional descriptive study design was employed to evaluate caregivers' knowledge and attitudes regarding the prevention of pressure ulcers (PUs). This design was selected as it enables the assessment of the current state of knowledge and attitudes without manipulating study variables, providing an accurate representation of existing practices in nursing homes.

2.2 Participants

The study population comprised caregivers working in 15 nursing homes across Sungai Petani, Kedah, Malaysia, in which all the nursing homes were registered with the Malaysian Department of Social Welfare. A total of 185 caregivers were identified. The sample size was calculated using the Taro Yamane formula with a precision level of 0.05, yielding a required sample of 126 participants. Stratified random sampling was used to ensure proportional representation from each nursing home.

2.3 Measurement Instruments

A structured, self-administered questionnaire was used for data collection and distributed via Google Form to ensure accessibility and convenience. It included socio-demographic information such as gender, age group, years of caregiving experience, highest educational qualification, and prior attendance at PU prevention training. Knowledge was measured using 12 multiple-choice questions which was adopted and adapted from Sari et al. (2021) [25], assigning one point for each correct response and zero for incorrect answers. Scores were converted to percentages and classified according to Bloom's cut-off points as good ($\geq 80\%$), moderate (60–79.9%), or poor ($< 60\%$). Attitude was evaluated using 11 statements rated on a 5-point Likert scale, with total scores converted to percentages and categorized as positive ($\geq 80\%$), neutral (60–79.9%), or negative ($< 60\%$). The knowledge scale demonstrated acceptable internal consistency (KR-20 = 0.849), while the attitude scale showed good reliability (Cronbach's $\alpha = 0.905$).

2.4 Face and Content Validity

Face and content validity of the questionnaire were established through expert review by three senior nursing lecturers with specialized expertise in geriatric nursing and PU prevention. These experts evaluated the instrument for clarity, relevance, and comprehensiveness. Their recommendations led to revisions in question wording, sequence, and clarity to enhance readability and ensure that the items accurately reflected the intended constructs.

2.5 Ethical Considerations

Ethical approval was granted by the university's Research Management Centre (RMC), approval was also obtained from directors of the nursing homes. Informed consent was obtained from all participants before data collection. Participation was entirely voluntary, and participants were assured of their right to withdraw at any time without penalty. All data were stored securely and handled in accordance with institutional guidelines to ensure confidentiality.

2.6 Data Analysis

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 27.0. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize socio-demographic data and levels of knowledge and attitude. The Spearman correlation test was used to assess the relationship between knowledge and attitude scores. A p-value of less than 0.05 was considered statistically significant.

3. RESULTS

This section presents the socio-demographic characteristics of the caregivers, their knowledge and attitude levels toward PU prevention, and the statistical relationship between knowledge and attitude.

3.1 Socio-Demographic Characteristics of Caregivers in Nursing Homes

This research involved 126 caregivers from 15 nursing homes across Sungai Petani, Kedah, all of whom consented to participate. The mean age was 38.87 years (SD = 13.32), with most aged 21–30 years (38.1%). Nearly three-quarters (72.2%) were female, reflecting the common predominance of women in caregiving roles, although gender has not been shown to significantly influence PU prevention knowledge or attitudes [16]. The highest qualification held by most participants was a diploma (23.8%), followed by secondary education (19.0%), certificate (18.3%), and primary education (17.5%). Almost half (44.4%) had five or fewer years of caregiving experience, while only 9.5% had 11 to 15 years and 10.3% had over 21 years of experience, indicating a workforce largely composed of early-career caregivers.

A majority (68.3%) had never attended workshops or conferences on PU prevention, highlighting a gap in professional development that could impact evidence-based practice.”

3.2 Caregivers' Level of Knowledge in Preventing Pressure Ulcers

This study found that 56.3% of caregivers had a good level of knowledge on PU prevention ($M = 10.75$, $SD = 1.16$, $p < 0.001$), while 11.9% demonstrated poor knowledge.

Most caregivers recognized key aspects of PU prevention, including shearing as a cause (78.6%), the risk of pain and infection (77.8%), and the importance of regular repositioning (90.5%). Awareness of hydration (71.4%) and moisturizing dry skin (68.3%) was also relatively high. However, fewer caregivers identified repositioning every two hours (66.7%), redness as an early warning sign (59.5%), or the need for pressure relief when skin turns red (50.0%). While 91.3% would refer deep PUs to a doctor, these gaps highlight the need for structured training focusing on early detection and adherence to evidence-based preventive practices.

3.3 Caregivers' Level of Attitude in Preventing Pressure Ulcers

Most caregivers (69.8%, $n = 88$) demonstrated a positive attitude toward PU prevention ($M = 2.79$, $SD = 0.37$), while 30.2% ($n = 38$) had a neutral attitude. No participants displayed a negative attitude, indicating an overall favourable disposition toward prevention.

Although attitudes were predominantly positive, the notable proportion of neutral responses suggests that some caregivers may not fully prioritize PU prevention. Targeted training and reinforcement could further strengthen commitment, aligning attitudes with knowledge to promote a more proactive approach in reducing PU incidence in nursing homes.

3.4 Relationship Between Knowledge and Attitude among Caregivers

The analysis showed no significant relationship between knowledge and attitude ($r = -0.131$, $p = 0.143$). While 56.3% ($n = 71$) of caregivers had good knowledge ($M = 8.52$, $SD = 2.98$) and 69.8% ($n = 88$) demonstrated a positive attitude ($M = 2.89$, $SD = 0.48$), the two variables appeared to operate independently. These results suggest that having adequate knowledge does not necessarily translate into stronger preventive attitudes, highlighting the need for ongoing training and practical reinforcement.

4. DISCUSSION

This study assessed caregivers' knowledge and attitudes regarding pressure ulcer (PU) prevention in nursing homes in Sungai Petani, Kedah.

The finding showed only 56.3% of caregivers demonstrated a good level of knowledge, indicating that overall knowledge among participants was lower than optimal. In comparison, previous study reported higher knowledge levels among healthcare workers in institutional care [11] [13]. The relatively lower percentage in this study may be due to insufficient structured training opportunities, reliance on on-the-job learning rather than formal education, and limited access to updated clinical guidelines on PU prevention. Item-level analysis indicated that caregivers performed well in identifying early signs of PUs and recognizing risk factors. However, knowledge was weaker in more technical areas, such as the recommended repositioning frequency and proper use of pressure-relieving devices.

While the proportion of caregivers with positive attitudes (69.8%) was higher than those with good knowledge, the percentage still reflects an area of concern. A significant portion of participants demonstrated only neutral attitudes, indicating that although caregivers recognize the importance of PU prevention, they may not prioritize it consistently. Factors such as heavy workload, competing care demands, and resource constraints likely influence this outcome, as observed by previous study [11].

A notable finding of this study indicates that knowledge was not significantly correlated with attitude, suggesting that higher knowledge does not necessarily translate into more positive attitudes toward PU prevention. This contrasts with the findings of Zeydi et al., 2024 [34], who reported a negative correlation between knowledge and attitudes ($r = -0.156$, $p = 0.035$) toward PU prevention. The difference in results underscores the complexity of the relationship between these variables and suggests that interventions should integrate educational initiatives with organizational and environmental support to effectively enhance caregivers' preventive attitudes and practices.

4.1 Study Limitations

This study was limited to nursing homes in Sungai Petani, Kedah, reducing the generalizability of the findings to other regions or care settings. Resource and time constraints restricted the sample size and depth of data collection. Additionally, workplace conditions such as staffing levels and institutional support may have influenced caregivers' responses, potentially affecting the accuracy of reported knowledge and attitudes.

4.2 Recommendations

Future research could adopt a mixed-method approach to provide both quantitative and qualitative insights into caregivers' knowledge, attitudes, and practices. Expanding the sample size to include caregivers from various healthcare facilities would enhance the representativeness of the findings. Incorporating the level of practice as a dependent variable could offer a more comprehensive understanding of how knowledge and attitudes translate into preventive actions. Extending the study nationwide would further improve generalizability. Additionally, developing and implementing targeted intervention programs aimed at enhancing caregiver education could strengthen both knowledge and attitudes toward PU prevention.

5. CONCLUSION

This study highlighted that while most caregivers in Kedah's nursing homes possess satisfactory knowledge and positive attitudes toward PU prevention, educational gaps remain. Ongoing training and support systems are essential to enhance practical application and care quality.

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