

The Knowledge Level of Elderly in Karang Taliwang Village and the Incidence of Low Back Pain in 2025

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Abstract: Low Back Pain (LBP) is a prevalent musculoskeletal problem worldwide, particularly among the elderly population. This study aims to analyze the relationship between the level of knowledge among elderly individuals in Karang Taliwang Village and the incidence of LBP. A quantitative approach with a cross-sectional design was employed, using an ordinal scale to measure knowledge levels and a nominal scale for LBP incidence. The results indicate a significant relationship between knowledge levels and LBP incidence, where elderly individuals with lower knowledge levels tend to experience LBP more frequently. This study concludes that enhancing education on LBP risk factors and prevention is essential for reducing its prevalence among the elderly. The scientific implication of this study highlights the need for evidence-based educational interventions to lower LBP prevalence and improve the quality of life among older adults.

Keywords: Elderly, Karang Taliwang Village, knowledge level, low back pain.

Introduction

Low Back Pain (LBP) is one of the most common musculoskeletal problems worldwide and a leading cause of disability across various age groups. This condition can cause pain or discomfort in the lower back area, which may interfere with daily activities and reduce the quality of life of those affected (Aras et al., 2020; Krishna et al., 2021). According to the World Health Organization (WHO), the number of global LBP cases is projected to increase from 619 million in 2023 to 843 million by 2050, in line with population growth and the increasing aging population (Pambudi et al., 2023; WHO, 2023). This condition significantly impacts individuals' quality of life, reduces work productivity, and disrupts daily activities and bodily functions (Saari et al., 2024). The prevalence of LBP varies across different regions, with the highest rates recorded in South America (13.47%) and the Asia-Pacific region (13.16%). In Southeast Asia, LBP prevalence reaches 7.76% and is expected

to rise further in the coming years (Mulfianda et al., 2021; Wu et al., 2020).

In general, LBP can be influenced by multiple factors, including age, lifestyle, physical activity, and individual awareness and knowledge regarding its prevention and management. As individuals age, their bodily functions decline, leading to an increased risk of LBP and difficulties in performing daily activities (Panandita et al., 2024). In addition to biological factors, the low level of knowledge among elderly individuals regarding LBP exacerbates the prevalence of this condition. Adequate knowledge of risk factors, prevention strategies, and pain management can help reduce the incidence and severity of LBP, particularly among vulnerable populations (Riset et al., 2024; Wahyu et al., 2024).

In real-world settings, many elderly individuals have limited awareness and understanding of LBP and effective management strategies. This lack of knowledge results in delays in prevention and treatment efforts, increasing the risk of more severe complications

(Rahmawati, 2021; Wahyu *et al.*, 2024). The absence of structured educational interventions based on scientific evidence remains a major challenge in addressing this issue. Therefore, further research is needed to assess elderly individuals' knowledge levels regarding LBP and its relationship to LBP incidence, which can serve as a foundation for developing more effective educational programs.

This study aims to explore the level of knowledge among elderly individuals in Karang Taliwang Village regarding LBP and its relationship with LBP incidence. The findings of this study are expected to provide a scientific basis for developing more effective education and prevention programs to reduce LBP prevalence among the elderly and improve their quality of life.

Materials and Methods

This study was conducted in Karang Taliwang Village in February 2025, chosen based on population characteristics that align with the research objectives. The study employed a quantitative design with a cross-sectional analytical approach to determine the relationship between the level of knowledge among the elderly and the incidence of LBP. The population consisted of all elderly individuals residing in Karang Taliwang Village, with a sample of 10 individuals selected using purposive sampling based on predetermined inclusion and exclusion criteria. The independent variable was the level of knowledge about LBP, measured using a validated and reliable questionnaire (Cronbach's $\alpha = 0.937$), while the dependent variable was the incidence of LBP diagnosed by a doctor. Data collection involved direct interviews using the questionnaire and data recording tools.

The study began with obtaining ethical approval and informed consent from the respondents. Data were gathered through interviews assessing respondents' knowledge of LBP, which were recorded and categorized according to predetermined scales. The incidence of LBP was confirmed based on medical diagnoses provided by a doctor. The collected data were analyzed using SPSS software. Univariate analysis was conducted to describe respondent characteristics based on age, gender, education level, and occupation. Bivariate

analysis using the Chi-square test was performed to examine the relationship between knowledge level and LBP incidence, with a significance criterion of $p\text{-value} < 0.05$.

Results and Discussion

This study involved 10 elderly respondents in Karang Taliwang Village, categorized based on age, gender, occupational background, and education level. Most respondents were 61 years old (40%), with a higher participation rate from females (60%) than males (40%). The majority of respondents had a Bachelor's degree (40%).

Table 1. Respondent Frequency Distribution Based on Age, Gender, Occupation, Education, Low Back pain, and Knowledge Level

Variable	Amount	Presentation
Age		
61	4	40,00%
62	1	10,00%
63	1	10,00%
65	1	10,00%
69	2	20,00%
80	1	10,00%
Gender		
Male	4	40,00%
Female	6	60,00%
Occupation		
Lecturer	2	20,00%
Teacher	2	20,00%
Homemaker	3	30,00%
Branch manager at BRI	1	10,00%
Head of a public office	1	10,00%
Civil servant	1	10,00%
Does not include	2	20,00%
Education		
Elementary School	1	10,00%
High School	1	10,00%
D1	1	10,00%
S1	4	40,00%
S2	1	10,00%
Low Back Pain		
Yes	9	90,00%
No	1	10,00%
Knowledge Level		
Good	1	10,00%
Moderate	8	80,00%
Low	1	10,00%

Based on the study results, no significant relationship was found between respondent characteristics (age, gender, occupation, and education) and knowledge level about LBP ($p > 0.05$). This contradicts the theory stating that education level plays a role in increasing health knowledge (Notoatmodjo S, 2016). However, this finding may be influenced by the small sample size (10 respondents), which may not represent a broader population.

Elderly Knowledge Level on LBP

This study examines the relationship between the elderly's knowledge level of LBP and LBP incidence. A total of 90% of respondents had a moderate knowledge level (30-60%), while 10% had a high knowledge level (>60%). Most respondents who experienced LBP had a moderate knowledge level.

Table 2. Relationship Between Knowledge Level and Respondent Characteristics

Relationship Between Knowledge Level and Respondent Characteristics		Knowledge Level		Total	P-Value
		31-60	61-100		
		n	n	n	
Age	61	4	0	4	0,075
	62	1	0	1	
	63	0	1	1	
	65	1	0	1	
	69	2	0	2	
Gender	Male	3	1	4	0,400
	Female	6	0	6	
Occupation	Lecturer	1	1	2	0,487
	Teacher	2	0	2	
	Homemaker	3	0	3	
	Branch Manager BRI	1	0	1	
	Head of a public office	1	0	1	
Education	Civil Servant	1	0	1	0,075
	Does not include	2	0	2	
	Elementari School	1	0	1	
	High school	1	0	1	
	D1	1	0	1	
	S1	4	0	4	
LBP	S2	0	1	1	0,100
	Yes	8	1	9	
	No	1	0	1	

Table 3. Relationship Between Knowledge Level and LBP Incidence

Knowledge Level	Low Back Pain				Total		P-Value
	Yes		no		n	%	
	n	%	n	%			
31-60	8	80,00%	1	10,00%	9	90,00%	1.000
61-100	1	10,00%	0	0,00%	1	10,00%	
Total	9	90,00%	1	10,00%	10	100,00%	

Chi-square analysis results indicate no significant relationship between the elderly's knowledge level and LBP incidence ($p = 1.000$). This suggests that although most respondents had a moderate knowledge level, it did not significantly affect LBP incidence. This result differs from (Wahyu et al., 2024), who found that elderly individuals with lower knowledge levels were more vulnerable to experiencing LBP.

Other factors that may influence this result include the small sample size and the

relatively high education level of the respondents, which may introduce bias in the study. Further studies with a larger sample size are necessary to obtain more valid conclusions.

The Relationship Between Characteristics and Elderly Knowledge Level on LBP

In this study, it was found that elderly individuals aged 61-69 years constituted the highest proportion of respondents with a good level of knowledge compared to other elderly age groups. Specifically, 1 respondent (100%) from this age group demonstrated good knowledge, as shown in Table 2. According to Hurlock's theory, older individuals generally have more developed cognitive maturity. However, the findings of this study indicate that increasing age does not always correlate directly with higher levels of knowledge and cognitive ability (Hurlock EB, 1998). This may be influenced by several factors, such as barriers to accessing information, a lack of education during productive years, and internal factors within the elderly themselves, such as reluctance to accept new information.

Based on Table 2, the study results indicate no significant relationship between respondents' gender and their level of knowledge about LBP. These findings contradict the theory proposed by Nugroho (2008), which suggests that gender differences can influence cognitive processes and psychological aspects in the elderly, thereby affecting their ability to adapt to new knowledge (Nugroho W et al., 2008). However, in this study, the level of knowledge between male and female respondents did not show a significant difference. This is likely due to a similar understanding of LBP among both genders, resulting in no significant relationship between respondents' knowledge levels and their gender.

The study also found that elderly individuals with a current or previous profession as a lecturer had a better level of knowledge compared to other occupational backgrounds, with 1 respondent (100%) from this group demonstrating good knowledge. According to Notoatmodjo, occupation indirectly provides opportunities for individuals to think and acquire knowledge. Through daily work activities, cognitive processes continue, allowing individuals to absorb and develop new ideas from

their surrounding environment (Notoatmodjo S, 2016).

The majority of respondents in this study had a relatively high level of education, with a dominance of bachelor's degree (S1) graduates. The findings indicate that elderly individuals with the highest level of education, specifically a master's degree (S2), demonstrated the best knowledge compared to other education levels, with one person (100%) from this group exhibiting the highest knowledge. However, this result did not show a significant relationship with overall knowledge levels.

Higher education is often associated with better health literacy, including knowledge of diseases such as LBP. This may have led to a lack of variation in LBP knowledge among respondents, as most already had a sufficient understanding of prevention and management strategies for the condition. With a higher level of education, respondents might be more aware of the importance of maintaining proper posture and implementing preventive measures recommended by healthcare professionals. Consequently, the limited variation in knowledge levels could explain the lack of a significant relationship between knowledge and LBP occurrence in this study. This finding aligns with the theory proposed by Kuncoro Ningrat, which states that the higher a person's level of education, the easier it is for them to receive and process information, ultimately contributing to increased knowledge (Nursalam, 2018).

Conclusion

This study indicates that the knowledge level of elderly individuals in Karang Taliwang Village has no significant relationship with LBP incidence. Respondent characteristics also do not significantly affect their knowledge level. Further studies with a larger population are recommended to obtain more representative and relevant findings in the effort to educate and prevent LBP.

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