

## The Relationship Between Age, Gender, Workload, and Complaints of Low Back Pain (LBP) among Emergency Room Nurses

Ahmad Dimas Dimiyati<sup>1</sup>, Marthia Ikhlasiah<sup>1</sup>, Ismarina<sup>1</sup>

<sup>1</sup> Master of Public Health Program, Faletihan University, Indonesia

Correspondence should be addressed to:  
Ahmad Dimas Dimiyati  
[ahmadimas199@gmail.com](mailto:ahmadimas199@gmail.com)

### Abstract:

Low Back Pain (LBP) is Pain felt in the lower back area, can be local pain or radicular pain or both. Risk factors for low back pain (LBP) include age, gender and workload. This study aims to determine the relationship between age, gender and workload with complaints of Low Back Pain (LBP) in nurses in the emergency department of RSUD Banten in 2022. This type of correlation research uses a cross-sectional study approach. The population in this study were all ER nurses at Banten Regional Hospital as many as 65 nurses. The number of samples was determined by a total sampling technique of 65 respondents. The results showed 33 (50.8%) nurses had mild LBP complaints, 35 (53.8%) nurses aged < 30 years, 40 (61.5%) female nurses and 38 (58.5%) nurses had a light workload. The results of the analysis showed that there was a relationship between age and complaints of LBP (P value 0.004), gender with complaints of LBP (P value 0.002) and workload with complaints of LBP (P value 0.000). It is expected that the Banten Regional Hospital will observe and treat nurses who have LBP complaints.

### Article info:

Submitted:  
15-08-2024  
Revised:  
02-10-2024  
Accepted:  
07-10-2024

### Keywords:

age; low back pain (LBP); gender; workload

DOI: <https://doi.org/10.53713/htechj.v2i5.251>

This work is licensed under CC BY-SA License.



## INTRODUCTION

Nursing is integral to professional health services based on nursing science and tips (Agil et al., 2022). Nursing is providing care to individuals, families, groups, or communities in sick and healthy conditions. Nursing services are a form of professional services integral to health services based on nursing science and tips aimed at individuals, families, groups, or communities, both healthy and sick (Tarigan et al., 2019).

The basic definition of a nurse is someone who plays a role in caring for or maintaining, helping, and protecting someone due to illness, injury, and aging. A professional nurse is a nurse who is responsible and authorized to provide nursing services independently and collaborate with other health workers according to their authority to carry out procedures programmed by doctors to assess patients and resolve their problems (Lestarina, 2019).

Nurses have a very important role and function in providing health services. The main function of nurses is to help clients, both sick and healthy, to achieve optimal health through nursing services. Nursing services are provided due to physical and mental weaknesses and limited knowledge (Pratiwi, (2020).

Nurses provide nursing services and are responsible for improving health conditions, patient services, and disease prevention (Yustisia et al., 2020). The duties of a nurse as a health worker

vary widely, including administering medication, lifting, moving patients, and helping patients to mobilize (Monica, 2021).

Nurses are part of the health care staff who play an active role in improving health development. Still, in carrying out their activities, nurses often do not pay attention to important things that are risk factors for occupational diseases (Indah et al., 2023). A common occupational disease is Low Back Pain (LBP). Low Back Pain (LBP) is a neuromuscular disorder caused by poor body activity, often experienced by the elderly. Still, it can be experienced by young people (Murni et al., 2024). Various musculoskeletal diseases, psychological disorders, and incorrect mobilization cause Low Back Pain (LBP). Thus, Low Back Pain (LBP) is a musculoskeletal disorder in the lower back area caused by various diseases and poor body activity (Raharja et al., 2021).

Low Back Pain (LBP) is pain felt in the lower back area, and it can be local pain, radicular pain, or both. This pain is felt between the corners of the lower ribs to the lower buttocks, namely the lumbar or lumbosacral area, and is often accompanied by the spread of pain towards the legs and feet (Dewi et al., 2022). Low back pain (LBP) is in the lumbosacral area, from the first lumbar vertebra to the first sacral. Pain can also spread to the upper back and groin. Low Back Pain (LBP) can be classified into two groups, namely chronic and acute. Acute Low Back Pain (LBP) complaints occur in less than 12 weeks. Chronic Low Back Pain (LBP) occurs within 3 months (Palinggi et al., 2023; Novelia et al., 2021).

Low Back Pain (LBP) risk factors include age, gender, and high workload. Age has a significant relationship with the incidence of low back pain (LBP). An elderly person will experience Low Back Pain (LBP) due to decreased body functions, especially bones, so they are no longer as elastic as when they were young (Ones et al., 2021).

## METHOD

This study uses a correlation research type with a cross-sectional study approach. Cross-sectional studies the correlation dynamics between factors and effects using an approach or data collection at once at one time. The data processing technique uses quantitative methods, with a questionnaire measuring instrument. This study was conducted at Banten Hospital in May-June 2022. The population in this study consisted of nurses in the Banten Hospital Emergency Room, with as many as 65 implementing nurses.

## RESULT

### Description of LBP complaints in nurses in the emergency room of Banten Regional Hospital

Table 1. Distribution of frequency of LBP complaints in nurses in the emergency room of Banten Regional Hospital

LBP Complaints	Frequency	Percentage
Light	33	50.8
Normal	32	49.2
Total	65	100.0

Based on the study's results in Table 1 above, it is known that out of 65 respondents, 33 (50.8%) respondents experienced mild LBP complaints, and 32 (49.2%) experienced normal LBP

complaints. The researcher's analysis of nurses working in the Emergency Room of Banten Regional Hospital showed that almost all respondents experienced LBP complaints in low back pain complaints. This is known from the results of the questionnaire analysis, which showed that 60.0% of respondents felt pain in the lower back area, 55.4% of respondents felt stiff in the lower back, 95.4% felt a little pain in the lower back, 44.6% felt a little pain before doing activities, 55.4% had a little pain in the lower back and 64.6% felt lower back pain while resting.

## Age Overview of Nurses in the Emergency Room of Banten Regional Hospital

Table 2. Frequency distribution of age of nurses in the emergency room of Banten Regional Hospital

Age (Years)	Frequency	Percentage
≥ 30	30	46.2
< 30	35	53.8
Total	65	100.0

Based on the results of the study in Table 2 above, it is known that out of 65 respondents, 30 (46.2%) respondents were aged ≥ 30 years, and 35 (53.8%) were aged <30 years. In theory, the results of this study indicate that 30 respondents who are at risk of experiencing LBP complaints are respondents aged ≥ 30 years. Age has a significant relationship with the incidence of low back pain (LBP).

## Overview of the gender of nurses in the emergency room of Banten Regional Hospital

Table 3. Frequency distribution of gender among nurses in the emergency room of Banten Regional Hospital

Age (Years)	Frequency	Percentage
Female	40	61.5
Male	25	38.5
Total	65	100.0

Based on the research results in Table 3 above, it is known that out of 65 respondents, 40 (61.5%) were female, and 25 (38.5%) were male.

## Overview of the workload of nurses in the emergency room of Banten Regional Hospital

Table 4. Distribution of workload frequency on nurses in the emergency room of Banten Regional Hospital

Level of Workload	Frequency	Percentage
Moderate	27	41.5
Low	38	58.5
Total	65	100.0

Based on the research results in Table 4 above, it is known that out of 65 respondents, 27 (41.5%) respondents felt that the workload was moderate, and 38 (58.5%) respondents felt that the workload was light.

## Relationship between age and complaints of Low Back Pain (LBP) in emergency room nurses at Banten Regional Hospital

Table 5. Frequency distribution of age with complaints of Low Back Pain (LBP) in IGD nurses at Banten Regional Hospital

Age	Complaint of Low Back Pain				Total		p-value
	Mild		Normal				
	N	%	N	%	N	%	
≥ 30 years	9	30.0	21	70.0	30	100	0.004
< 30 years	24	68.6	11	17.2	35	100	
Total	33	50.8	32	49.2	65	100	

Based on Table 5, it is known that out of 30 respondents aged ≥30 years, 9 (30.0%) respondents experienced mild LBP complaints, and 21 (70.0%) experienced normal LBP. Meanwhile, out of 35 respondents aged <30 years, 24 respondents (68.6%) experienced mild LBP complaints, and 11 (17.2%) experienced normal LBP complaints. The statistical test results obtained a p-value = 0.004, at  $\alpha = 0.05$  ( $p < \alpha$ ); it can be concluded that there is a significant relationship between age and Low Back pain complaints in IGD nurses at Banten Hospital in 2022.

## The relationship between gender and complaints of Low Back Pain (LBP) in emergency room nurses at Banten Regional Hospital

Table 6. Frequency distribution of gender with complaints of Low Back Pain (LBP) in emergency room nurses at Banten Regional Hospital

Gender	Complaint of Low Back Pain				Total		p-value	OR 95% CI
	Mild		Normal					
	N	%	N	%	N	%		
Female	27	67.5	13	32.5	40	100	0.002	6.577
Male	6	24.0	19	76.0	25	100		
Total	33	50.8	32	49.2	65	100		

Table 6 shows that out of 40 female respondents, 27 (67.5%) respondents experienced mild LBP complaints, and 13 (32.5%) respondents experienced normal LBP complaints. Meanwhile, out of 25 male respondents, 6 (24.0%) experienced mild LBP complaints, and 19 (76.0%) experienced normal LBP complaints. The statistical test results obtained a p-value = 0.002, at  $\alpha = 0.05$  ( $p < \alpha$ ). It can be concluded that there is a significant relationship between gender and Low Back pain complaints in IGD nurses at Banten Hospital in 2022. The analysis results also obtained OR = 6.577, meaning that female respondents are 6 times more likely to experience mild LBP complaints than male respondents.

## The relationship between workload and Low Back Pain (LBP) complaints in emergency room nurses at Banten Regional Hospital

Table 7. Distribution of workload frequency with Low Back Pain (LBP) complaints in Banten Regional Hospital Emergency Room Nurses

Workload	Complaint of Low Back Pain				Total		p-value	OR 95% CI
	Mild		Normal					
	N	%	N	%	N	%		
Moderate	26	96.3	1	3.7	27	100	0.000	115.143
Low	7	18.4	31	81.6	38	100		
Total	33	50.8	32	49.2	65	100		

Table 1.7 shows that of the 27 respondents who felt that their workload was moderate, 26 (96.3%) respondents experienced mild LBP complaints, and 1 (3.7%) respondent experienced normal LBP complaints. Meanwhile, of the 38 respondents who felt their workload was light, 7 (18.4%) experienced mild LBP complaints, and 31 (81.6%) experienced normal LBP complaints. The statistical test results obtained a p-value = 0.000, at  $\alpha = 0.05$  ( $p < \alpha$ ); it can be concluded that there is a significant relationship between workload and Low Back pain complaints in IGD nurses at Banten Hospital in 2022. The results of the analysis also obtained OR = 115.143, meaning that respondents with moderate workloads are at risk of experiencing mild LBP complaints compared to respondents who feel that their workloads are light.

## DISCUSSION

Low Back Pain or lower back pain is limited to the lumbar region. Still, the symptoms are more widespread and not limited to one nerve root but widely originate from the lumbar intervertebral disc (Rosadi et al., 2022). Lower back pain, or LBP, is an unpleasant condition due to pain accompanied by limitations in activity caused by pain when moving or mobilizing (Purnomo et al., 2022). Age has a significant relationship with the incidence of low back pain (LBP). An elderly person will experience Low Back Pain (LBP) due to decreased body functions, especially bones, so they are no longer as elastic as when they were young (Mustagfirin et al., 2020).

Females are at risk for Low Back Pain (LBP) because, in women during menstruation, there will be an increase in the hormone prostaglandin, which carries inflammatory compounds that will cause pain that spreads to the back. When women experience menopause, bone density will decrease due to decreased estrogen hormone, so there is a decrease in osteoblasts and an increase in osteoclasts, allowing LBP to occur. The prevalence of LBP is higher in women than in men and shows that women are more often asked for leave from work due to LBP (Pandjukang et al., 2020).

From an ergonomic perspective, every workload a person receives must be appropriate and balanced with both the physical abilities, cognitive abilities, and limitations of the person receiving the load. The load can be a physical load or a mental workload. The physical workload can include lifting, carrying, caring for, and pushing. The mental workload can be determined by the level of expertise and work performance of an individual compared to others (Masniar et al., 2022).

## CONCLUSION

There is a significant relationship between age and low back pain complaints among emergency room nurses at Banten Regional Hospital, with a p-value of 0.004. There is a significant relationship between gender and low back pain complaints among emergency room nurses at Banten Regional Hospital, with a p-value of 0.002. There is a significant relationship between workload and low back pain complaints among emergency room nurses at Banten Regional Hospital, with a p-value of 0.000.

## REFERENCES

- Agil, H. M., Mulyani, P. S., & Deniati, K. (2022). Hubungan Kemampuan Komunikasi Terapeutik Perawat Dengan Kepuasan Pasien Di Ruang Rawat Inap Rumah Sakit. *Wal'afiat Hospital Journal*, 95-102.
- Indah, V., & Utami, T. N. (2023). Analisis Faktor Risiko Ergonomi Perawat Terhadap Keluhan Musculoskeletal Disorders. *Jurnal Keperawatan Priority*, 6(2), 131-143.
- Lestarina, D. (2019). *Perlindungan Hukum Bagi Pasien Akibat Kelalaian Perawat Dalam Memberikan Obat Dihubungkan Dengan Undang-Undang Nomor 36 Tahun 2009 Tentang Kesehatan Jo Undang-Undang Nomor 8 Tahun 1999 Tentang Perlindungan Konsumen* (Doctoral dissertation, FAKULTAS HUKUM UNPAS).
- Masniar, M., Histiari, A. R., & Pangestu, D. A. B. (2022). Analisa Beban Kerja Mental Menggunakan Metode Nasa-Tlx Pada Bagian Operator. *Metode: Jurnal Teknik Industri*, 8(1), 11-20.
- Monica, A. S. (2021). *PEMBERIAN TERAPI KOMPRES DINGIN DALAM MENGATASI LOW BACK PAIN PADA WARGA YANG BERPROFESI SEBAGAI PERAWAT DI TAMBAK WEDI BARU RT 05 RW 03 SURABAYA* (Doctoral dissertation, PROFESI NERS).
- Novelia, S., Rukmaini, & Anisah, S. (2021). The Effect of Warm Compress on Low Back Pain during Pregnancy. *Nursing and Health Sciences Journal (NHSJ)*, 1(3), 254-257. <https://doi.org/10.53713/nhs.v1i3.55>
- Pandjukung, A. P., Damanik, E. M. B., & Hutasoit, R. (2020). Hubungan usia dan jenis kelamin pada penderita nyeri punggung bawah (low back pain) dengan komorbid diabetes melitus Di RSUD Prof. Dr. WZ Johannes Kupang tahun 2018. *Cendana Medical Journal*, 8(2), 9-15.
- Pratiwi, U. D. (2020). *Evaluasi pelaksanaan pelayanan home care di Puskesmas Antang Perumnas Kota Makassar tahun 2020* (Doctoral dissertation, Universitas Muslim Indonesia).
- Raharja, P., Bunga, D. N. F. H., Prayuda, A., & Firdausi, A. N. (2021). PENGARUH PENDIDIKAN KESEHATAN TERHADAP TINGKAT PENGETAHUAN LANSIA TENTANG NYERI PUNGGUNG BAWAH (LOW BACK PAIN) DI DESA KARANGJAYA RT 02 RW 03 KABUPATEN KARAWANG 2021.
- Rosadi, R., Ika Wardoyo, S. S., & Algifari, M. F. (2022). Penatalaksanaan Fisioterapi Kasus Lower back pain ec Spondylosis Lumbal; Studi Kasus. *Jurnal Ilmiah Fisioterapi*, 5(01), 15-20.
- Tarigan, R., & Handiyani, H. (2019). Manfaat Implementasi Dokumentasi Asuhan Keperawatan Berbasis Komputerisasi Dalam Meningkatkan Mutu Asuhan Keperawatan. *Jurnal Ilmiah Kesehatan Pencerah*, 8(2), 110-116.