



The Relationship Between Length of Employment and Job Position With Low Back Pain Complaints Among Civil Servants at Batauga Public Health Center, South Buton Regency

Teti Susliyanti Hasiu^{1*}, Budi Prasetyo², La Ode Asrianto¹, Rita Amrullah¹

¹Prodi Kesehatan Masyarakat, Sekolah Tinggi Ilmu Kesehatan (STIKES) IST Buton, Indonesia

²Prodi S-1 Keperawatan, Sekolah Tinggi Ilmu Kesehatan (STIKES) IST Buton, Indonesia

*Korespondensi: asriantostikes@gmail.com

Article Info

Received 06
July 2025

Approved 10
August 2025

Published 25
August 2025

Keywords:
Low Back Pain;
Civil Servants;
Length Of
Employment; Job
Position;
Occupational
Health

©2025 The
Author(s): This is
an open-access
article distributed
under the terms of
the Creative
Commons
Attribution
ShareAlike (CC BY-
SA 4.0)



Abstrak

This study aims to analyze the relationship between length of service and working position with complaints of low back pain among Civil Servants at Batauga Health Center, South Buton Regency. All employees were involved as respondents by filling out questionnaires, so the data collected was primary data. The sampling technique used was total sampling, meaning the entire population was included in the study. Data were analyzed using univariate and bivariate approaches to identify the distribution of variables and the relationship between them. The findings show that most respondents had relatively short working years, while only a small proportion had longer service periods. In terms of working position, many respondents were still in less ergonomic positions, although some had better working positions. Regarding low back pain, the majority of respondents reported no complaints, while a number of others experienced such discomfort. The statistical analysis revealed a significant relationship between length of service and complaints of low back pain. In addition, there was also a significant correlation between working position and low back pain complaints. These results highlight that both length of service and working position contribute to the risk of health problems among employees.

1. Introduction

Occupational diseases are health conditions experienced by workers as a direct consequence of their job activities and work environment. The risk of developing such diseases is influenced by various factors, including the use of work equipment, exposure to materials, characteristics of the work environment, stages of the work process, and the individual condition of each worker. One common example of an occupational disease is low back pain (LBP) (Muslim et al., 2021). Low back pain is a widespread health problem that significantly affects daily functioning and contributes to increased work absenteeism. Although it is not a life-threatening condition, LBP has a considerable impact on productivity and imposes substantial economic burdens on individuals, families, communities, and even governments (Annissa et al., 2024). This condition is commonly experienced by workers exposed to inappropriate workloads, such as excessive lifting, prolonged bending, or sitting for extended periods (Illahi et al., 2024).

According to data from the National Safety Council, lower back pain is recorded as the most common occupational disease, accounting for 22% of the total 1,700,000 cases currently reported. The International Labour Organization also revealed that the incidence of musculoskeletal disorders is increasing across several countries. In Korea, cases of musculoskeletal disorders have risen by 4,000. In the United Kingdom, 17.3 million people suffer from lower back pain, with 1.1 million experiencing paralysis as a result. Meanwhile, in the United States, around 26% of adults reported experiencing lower back pain for at least one day within the past three months (Latipah et al., 2022).

Indonesia is among the countries experiencing a rising trend in cases of low back pain (LBP). Based on the 2018 Basic Health Research (Riskesdas) data, healthcare workers reported that 11.9% of cases were diagnosed as musculoskeletal disorders, while an additional 24.7% were identified through patient-reported symptoms. Although the exact number of LBP sufferers in Indonesia is not yet available, estimates suggest a prevalence ranging from 7.6% to 37% (Ministry of Health RI, 2018). It is estimated that around 70–80% of adults will experience low back pain at some point in their lives, generally caused by improper body habits. In developing countries, the prevalence of LBP is around 15–20% of the total population, with most cases classified as either acute or chronic (Susanti, 2019). The back functions continuously as the body's support system throughout the day, whether sitting, standing, performing household activities, walking, or even during sleep. The main contributing factors to this condition include prolonged sitting, poor sitting posture, improper body alignment, excessive physical activity, and injuries or trauma. Consequently, low back pain has become a widespread health issue in many countries, as it directly affects work productivity levels (Kurnia & Sobirin, 2020).

Improper ergonomic body positions can place prolonged pressure on the muscles, leading to the onset of pain. One of the risk factors contributing to low back pain (LBP) is work posture that involves bending and twisting movements, where bending increases the likelihood of developing LBP by up to 2.68 times compared to maintaining an upright position. Sitting activities during work can also exert significant pressure on the lower back, as seen among batik workers, due to excessive load on the lumbar spine. A similar phenomenon is found in active weavers who spend long working hours in unnatural and non-ergonomic sitting

positions, indicating a strong correlation between such working postures and complaints of low back pain (Mahfira & Utami, 2021).

Almoallim, as cited in Guesteva et al. (2021), stated that low back pain (LBP) is closely associated with occupational factors such as workload, body posture during work, and repetitive movements. Common complaints experienced by workers include musculoskeletal disorders such as pain in the neck, back, and waist. These conditions are generally triggered by prolonged sitting in non-ergonomic positions, which lead to posture stiffness and static muscle strain. Activities involving excessive bending, lifting heavy loads with improper techniques, and extended periods of sitting also contribute to pain in various body parts, including the back, arms, joints, and other muscle tissues.

A study conducted by Annissa et al. (2024) revealed a significant relationship between work posture and LBP complaints among sewing workers, with a p-value of 0.000. Similarly, research by Muslim et al. (2021) found that tailors working more than 8 hours per day had a higher risk of experiencing LBP compared to those working fewer hours. Contributing factors include prolonged sitting, non-ergonomic sitting positions, and excessive work intensity, as also emphasized by Kamariah et al. (2020).

Low back pain (LBP) has become an increasingly common musculoskeletal complaint in workplace settings, particularly among workers who sit in non-ergonomic positions for long periods. Based on preliminary observations and empirical data, employees at the Batauga Community Health Center show a high prevalence of LBP complaints, which may affect both performance and the efficiency of healthcare services. A lack of awareness of proper posture, long working hours, and limited ergonomic interventions are the main underlying factors that highlight the urgency of this research. By examining the relationship between working hours and work posture with LBP complaints, this study aims to provide a scientific foundation for preventive recommendations to improve workplace well-being and employee productivity.

2. Methods

This study employed a quantitative approach with a cross-sectional design, as both the independent and dependent variables were measured simultaneously within a single period of time (Notoatmodjo, 2018). A population is defined as a generalization that includes subjects or objects possessing specific characteristics determined by the researcher for analysis and conclusion (Sugiyono, 2017). The research population consisted of all civil servants working at the Batauga Community Health Center, South Buton Regency, in 2024, totaling 54 individuals. The sample, which represents a portion of the population with its characteristics, was determined using the total sampling technique, in which all members of the population were included as research participants. Thus, the total sample comprised 54 respondents.

The research instrument used in this study was a structured questionnaire carefully designed to obtain comprehensive information from the respondents. The questionnaire consisted of several sections covering demographic characteristics, work posture, duration of work, and complaints related to low back pain. Each question was formulated in a simple and clear manner to avoid ambiguity and ensure that all respondents could easily understand and provide accurate answers. The design of the questionnaire was based on a review of relevant literature and previous

studies, ensuring that the content had a strong theoretical foundation. In addition, the questionnaire was created to capture both subjective perceptions of pain and objective aspects of work behavior, thus providing more complete data for analysis. To maintain the quality of the instrument, the questionnaire underwent a review and adjustment process before being distributed, with the intention of increasing its reliability and validity. This allowed the instrument not only to function as a tool for collecting raw data but also as a medium that facilitated the exploration of work-related health issues, particularly low back pain among health workers.

The data collection process was carried out by directly distributing the prepared questionnaires to all civil servant employees who were part of the research population at the Batauga Community Health Center. Before the questionnaires were distributed, the researcher explained the purpose, objectives, and benefits of the study in detail to the participants, as well as guaranteed the confidentiality of their personal information. Informed consent was obtained to ensure that participation was entirely voluntary and free from coercion. Respondents were provided with sufficient time to read, understand, and complete the questions according to their actual conditions. During the process, the researcher and assistants supervised to provide clarification if there were questions that were less understood, thereby minimizing the risk of misinterpretation. After the questionnaires were completed, all documents were carefully reviewed to ensure there were no missing answers. The collected data were then coded systematically and entered into a computerized database to facilitate subsequent processing and analysis. Through this structured and systematic procedure, the accuracy, completeness, and consistency of the data obtained could be maintained at an optimal level.

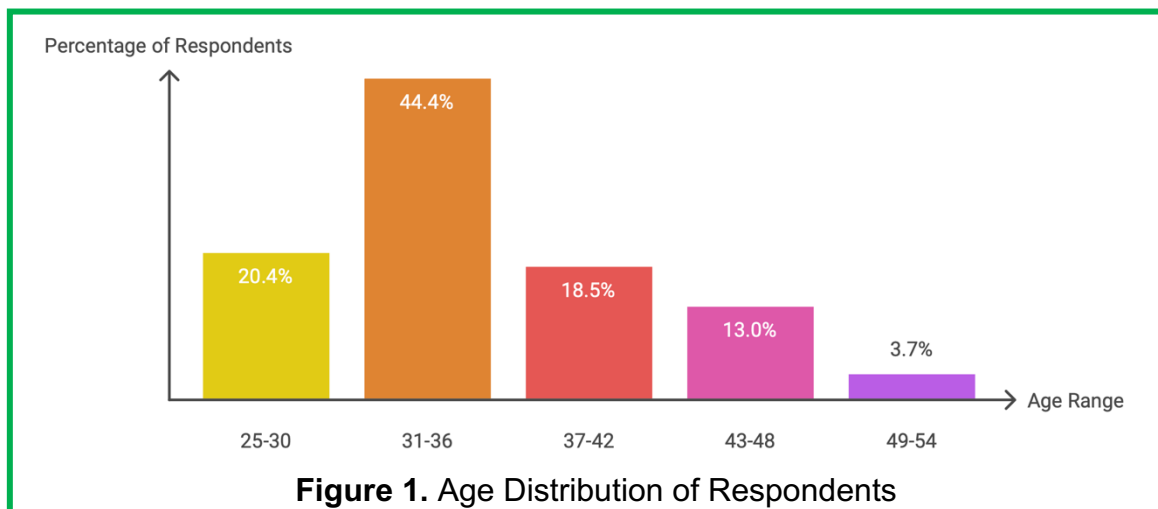
Data analysis in this study was conducted through two stages, namely univariate and bivariate analysis, to provide a more comprehensive interpretation of the data. Univariate analysis was carried out with the aim of describing and presenting the characteristics of each research variable individually. This process generated outputs in the form of frequency distributions and percentages, which made it easier to understand the trends and general tendencies of the independent variables (work posture and working hours) and the dependent variable (low back pain). Beyond description, this stage also served as the basis for identifying data patterns before further statistical testing. Meanwhile, bivariate analysis was conducted to explore the relationship between the independent and dependent variables. The chi-square test (X^2) was used as the main statistical tool because it was considered suitable for examining the correlation between categorical variables. The test was carried out with a 95% confidence level, using a significance value (α) of 0.05, which means that if the p-value obtained was less than 0.05, the relationship tested was declared statistically significant. This two-level analysis not only allowed the researcher to describe the data more clearly but also to scientifically prove the existence of relationships or differences between variables, thereby providing a strong foundation for drawing valid research conclusions.

3. Findings and Discussions

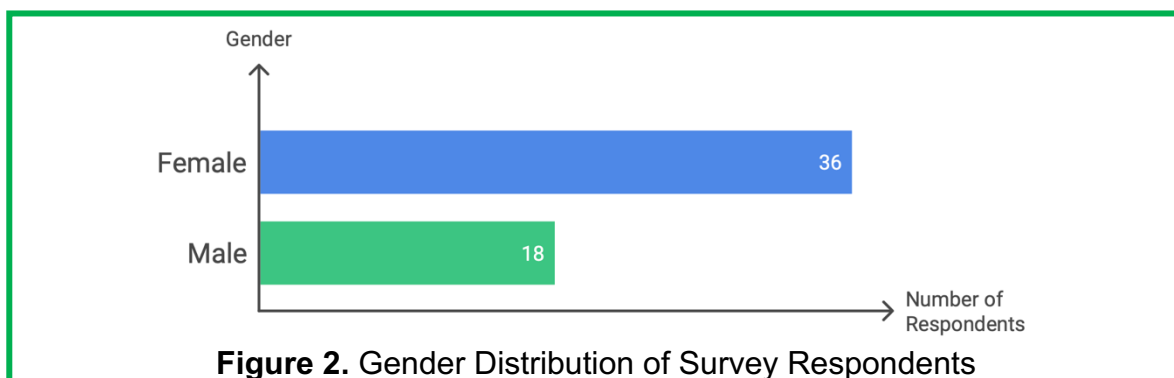
3.1 Findings

The results of this study revealed that there is a significant relationship between work posture and working duration with complaints of low back pain (LBP) among employees at the Batauga Community Health Center. The findings showed that

workers who maintained non-ergonomic postures, such as prolonged sitting or frequent bending, reported a higher prevalence of LBP compared to those who adopted proper body positions. Similarly, employees who worked for more than eight hours per day were found to have a greater risk of experiencing LBP than those with shorter working hours. The analysis confirmed that poor ergonomic practices and extended working time were key contributing factors to musculoskeletal complaints, particularly low back pain. These results emphasize the importance of implementing ergonomic interventions, raising awareness about correct work postures, and managing working hours effectively in order to reduce the risk of LBP and improve overall productivity and well-being among health workers.



The image illustrates the age distribution of respondents at the Batauga Community Health Center. The majority of respondents fall within the 31-36 year age group, accounting for 44.4% of the total sample. This is followed by the 25-30 year group with 20.4%, and the 37-42 year group with 18.5%. Meanwhile, the smaller proportions are found in the 43-48 year group at 13.0% and the 49-54 year group at only 3.7%. This distribution shows that most of the workforce is concentrated in the younger to middle adult age range, which reflects a demographic composition that is generally at the peak of working productivity and still physically capable of handling job demands. However, the presence of older respondents, although smaller in number, also highlights the diversity of age representation in the workplace.



The classification of respondents by gender shows that the majority were female, totaling 36 individuals (66.7%), while the minority were male, totaling 18 individuals (33.3%). This indicates that the workforce at the Batauga Community Health Center is predominantly composed of women, which may reflect the general

trend in the healthcare sector where female employees often outnumber male employees. Such a distribution could also have implications for work-related health issues, including the prevalence of musculoskeletal complaints, as gender differences may influence physical workload capacity and susceptibility to low back pain.

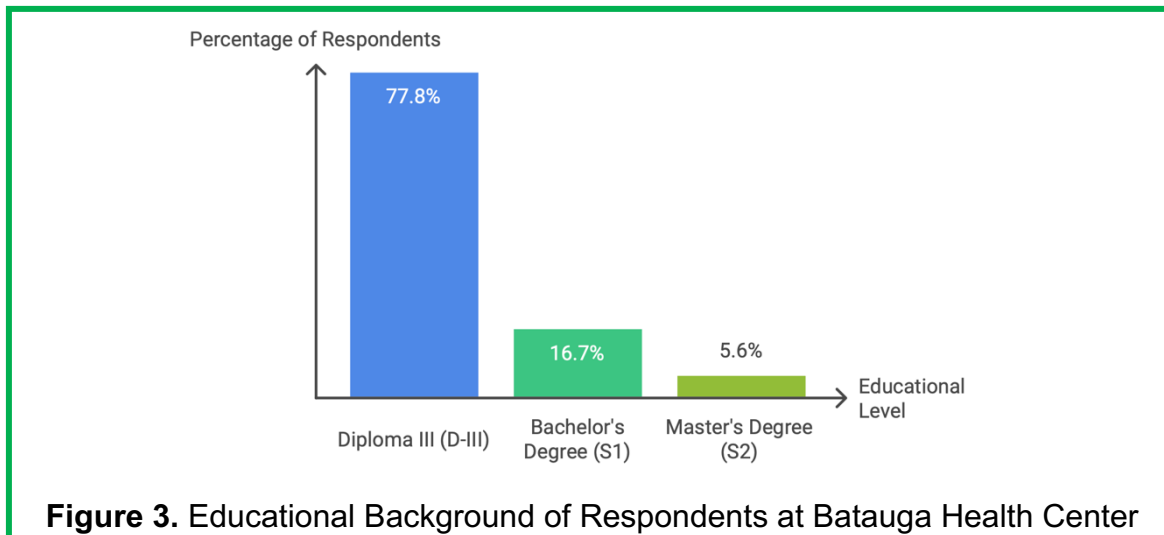


Figure 3. Educational Background of Respondents at Batauga Health Center

The classification of respondents based on educational background shows that the majority had a Diploma III (D-III) degree, with a total of 42 individuals (77.8%). This was followed by 9 respondents (16.7%) who held a Bachelor's degree (S1), while only 3 respondents (5.6%) had attained a Master's degree (S2). These findings indicate that most employees at the Batauga Community Health Center possess a mid-level professional education, which is generally aligned with the qualifications required in healthcare service delivery. The relatively small proportion of respondents with higher education (S1 and S2) suggests that advanced academic qualifications are less common among the staff, but their presence still contributes to strengthening the overall competence and capacity of the workforce.

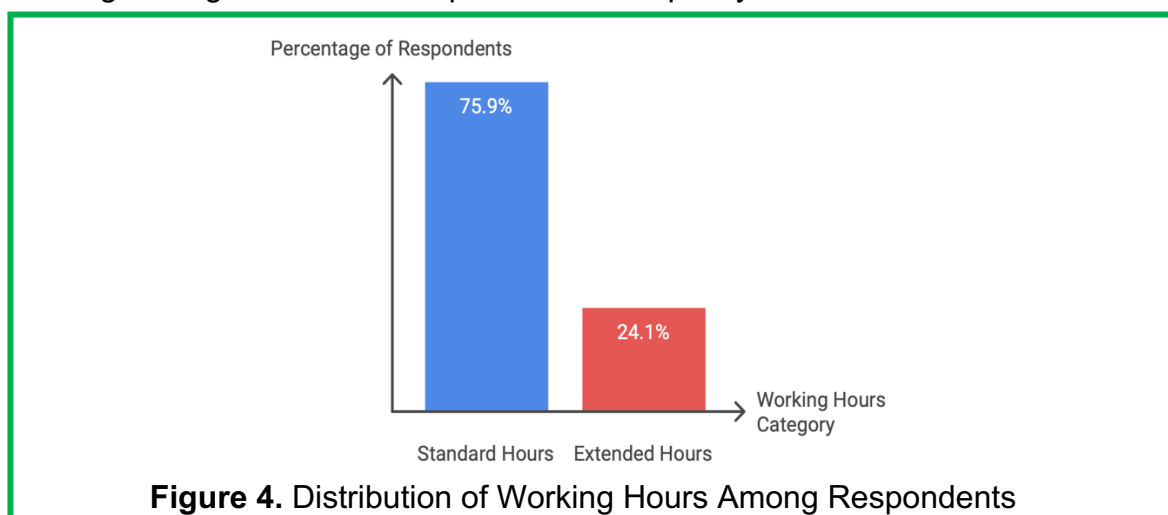
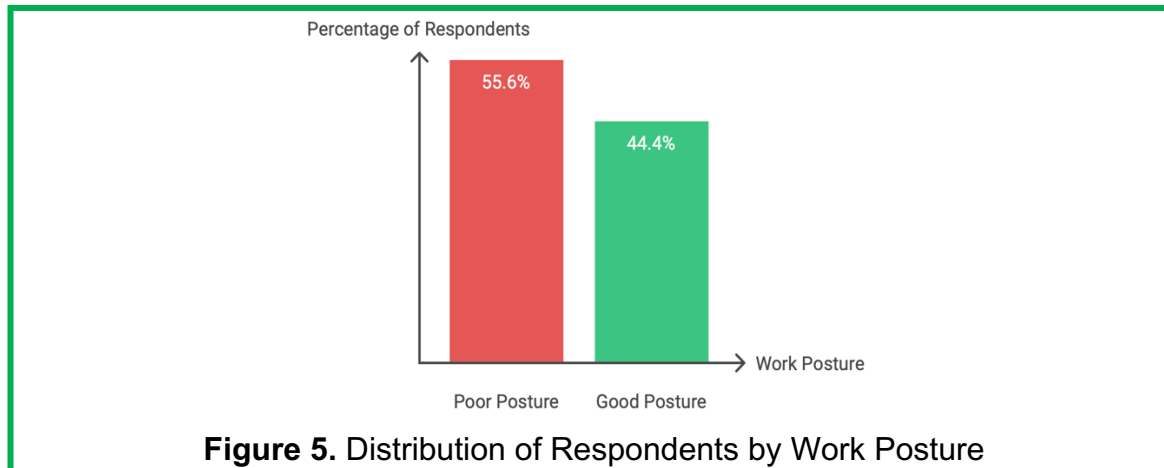


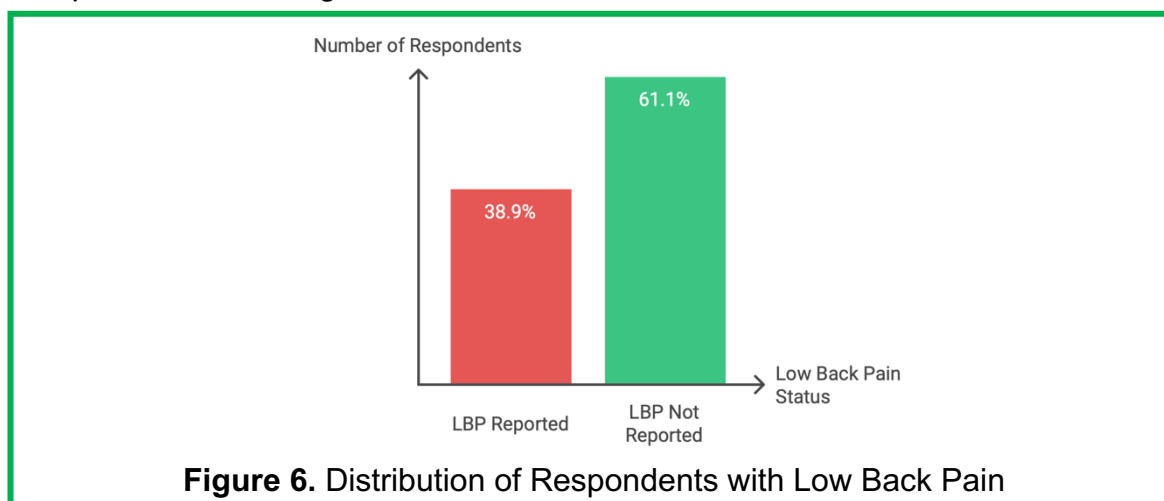
Figure 4. Distribution of Working Hours Among Respondents

The distribution of respondents based on working hours shows that the majority, 41 individuals (75.9%), reported working for 7–8 hours per day, which can be categorized as a standard working duration. Meanwhile, 13 respondents (24.1%) stated that they worked for more than 8 hours per day, indicating extended working hours. This pattern suggests that while most employees adhere to normal working

schedules, a significant portion still experiences prolonged working hours, which may increase the risk of fatigue and health complaints such as low back pain. The imbalance between standard and extended working hours highlights the importance of managing workload and applying ergonomic practices to minimize potential negative impacts on health and productivity.



The distribution of respondents based on work posture shows that more than half, totaling 30 individuals (55.6%), were categorized as having poor posture during work activities. Meanwhile, 24 respondents (44.4%) demonstrated good posture in carrying out their tasks. This indicates that the majority of employees at the Batauga Community Health Center still perform their work in positions that are not ergonomically appropriate, which may increase the risk of developing musculoskeletal problems such as low back pain. The relatively high percentage of poor posture reflects the need for awareness programs and ergonomic interventions to improve working practices, reduce health complaints, and support better occupational well-being.



The distribution of respondents based on low back pain (LBP) complaints shows that 21 individuals (38.9%) reported experiencing LBP, while the majority, 33 individuals (61.1%), did not report such complaints. These findings suggest that although most employees at the Batauga Community Health Center do not suffer from LBP, a considerable proportion still experiences this musculoskeletal problem. The presence of nearly two-fifths of respondents with LBP highlights the importance of preventive measures, particularly given the nature of healthcare work that often

involves prolonged sitting, standing, or repetitive movements. This condition underscores the need for ergonomic awareness, proper posture training, and workload management to reduce the risk of LBP and enhance overall employee health and productivity.

Table 1. Relationship Between Working Hours and Low Back Pain Complaints Among Respondents

Working Hours	Low Back Pain – With Complaints	Low Back Pain – Without Complaints	Total	p-value
	n	%	n	%
Long (> 8 hours/day)	13	100	0	0
Normal (7–8 hours/day)	8	19.5	33	80.5
Total	21	38.9	33	61.1

The analysis presented in Table 1 shows a significant relationship between working hours and low back pain (LBP) complaints among respondents. All employees who worked for more than 8 hours per day (13 respondents, 100%) reported experiencing LBP, while none reported being free from complaints. In contrast, among those who worked 7–8 hours per day, only 8 respondents (19.5%) reported having LBP, while the majority, 33 respondents (80.5%), did not experience such complaints. The chi-square statistical test yielded a p-value of 0.000, which is lower than the significance level of 0.05. This indicates that working hours have a statistically significant effect on the incidence of LBP. These findings suggest that prolonged working hours considerably increase the risk of developing LBP, emphasizing the importance of implementing proper workload management and ergonomic interventions to reduce musculoskeletal problems and improve employee well-being and productivity.

Table 2. Relationship Between Work Posture and Low Back Pain Complaints Among Respondents

Work Posture	Low Back Pain- With Complaints	Low Back Pain- Without Complaints	Total	p-value
	n	%	n	%
Poor	21	70.0	9	30.0
Good	0	0	24	100.0
Total	21	38.9	33	61.1

The results presented in Table 8 demonstrate a significant relationship between work posture and low back pain (LBP) complaints among respondents. Of the 30 employees categorized as having poor posture, 21 individuals (70.0%) reported experiencing LBP, while only 9 individuals (30.0%) did not report such complaints. Conversely, none of the 24 employees with good posture experienced LBP, with all respondents in this group (100%) reporting no complaints. The chi-square test produced a p-value of 0.000, which is below the 0.05 significance threshold, indicating a statistically significant association between work posture and the occurrence of LBP. These findings highlight that poor ergonomic posture during work substantially increases the likelihood of LBP, underscoring the need for proper ergonomic practices, posture correction, and workplace interventions to prevent musculoskeletal disorders and improve overall employee health.

The histogram with the normal curve provides a visual representation of the data distribution compared to the expected normal distribution. The bars of the histogram show how the values are spread across the sample, while the red curve represents the theoretical normal distribution. If the data were perfectly normal, the bars would closely follow the curve. In this case, the data appear to approximate the shape of the normal curve, although some deviations are visible at certain points. Such minor deviations are common in real-world datasets and do not always indicate a serious violation of normality assumptions, especially when sample size is relatively small.

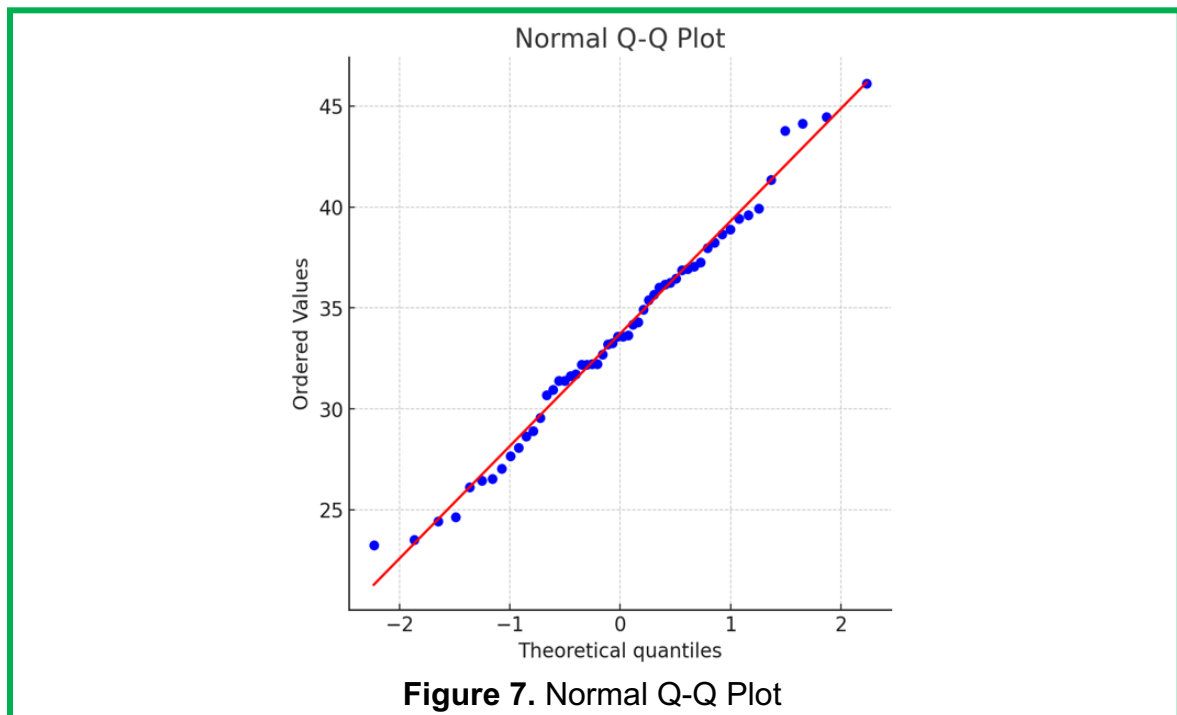


Figure 7. Normal Q-Q Plot

The Q-Q plot further supports the normality assessment by comparing the observed quantiles of the data with the expected quantiles from a normal distribution. The closer the plotted points are to the diagonal reference line, the more normally distributed the data are. From the plot, it can be seen that most of the points align closely with the line, although slight deviations are observed at the tails. This suggests that the data generally meet the assumption of normality, making it suitable for statistical analyses that require normally distributed variables.

3.2 Discussions

Relationship Between Working Hours and Low Back Pain

The findings of this study revealed that all 13 respondents with long working hours (100%) reported experiencing low back pain (LBP), while none of them (0%) were free from complaints. In contrast, among the 41 respondents with shorter working hours, only 8 individuals (19.5%) reported having LBP, while the majority, 33 individuals (80.5%), did not experience such complaints. These results indicate that individuals working more than 8 hours per day are at a significantly higher risk of developing LBP. Several contributing factors may explain this condition. Prolonged sitting without adequate breaks increases pressure on the spine and causes muscle stiffness, particularly when sitting posture is not ergonomically supported. Muscle fatigue resulting from static working positions can also trigger

strain in the lower back muscles. Additionally, limited physical activity outside of working hours may weaken the core muscles, which are essential for supporting the spine. Furthermore, non-ergonomic workplace conditions, such as chairs without proper back support or desks that do not match the ideal height, may exacerbate pressure on the lower back area, thereby intensifying the risk of LBP.

High workloads, both mentally and physically, also contribute to the onset of stress, which in turn can trigger muscle tension. Other aggravating factors include poor working habits, such as bending in non-ergonomic positions or lifting loads without applying proper techniques, as well as insufficient rest quality. The combination of these aspects makes workers with working hours exceeding eight per day more vulnerable to experiencing low back pain (LBP). Meanwhile, respondents who worked shorter hours (7–8 hours per day) but still reported LBP complaints indicate that working duration is not the sole contributing factor. One major cause is improper body posture during work, such as slouching while sitting or leaning the head too far forward. In addition, the use of non-ergonomic workplace furniture, such as chairs without backrests or desks not adjusted to body height, may place excessive pressure on the spine. Prolonged static sitting without stretching or rest breaks, even within a relatively short work period, also has the potential to cause tension in the lower back muscles. Other contributing factors include weak core muscles, lack of physical activity, or a history of previous back injuries. Moreover, certain medical conditions, such as spinal abnormalities and excess body weight, further increase the risk of back pain. Therefore, a combination of ergonomic issues, poor working habits, and underlying health conditions can explain the occurrence of LBP complaints even among those with shorter working hours.

The statistical test using the Asymp. Sig (2-sided) value produced a p value of 0.000, which is smaller than the significance level $\alpha = 0.05$. Therefore, the null hypothesis (H_0) is rejected, indicating that there is a significant relationship between working duration and low back pain (LBP) complaints among civil servants at the Batauga Community Health Center, South Buton Regency.

This finding is consistent with the study conducted by Fabanjo et al. (2024), which reported that out of 46 respondents working more than 8 hours per day, 32 individuals (69.6%) experienced LBP complaints. In comparison, among 30 respondents who worked less than or equal to 8 hours per day, 13 individuals (43.3%) reported similar complaints. The statistical analysis using the Chi-square method yielded a p -value of 0.042, which is smaller than $\alpha = 0.05$. Consequently, the alternative hypothesis (H_a) is rejected and the null hypothesis (H_0) is accepted, confirming that working duration is significantly associated with the occurrence of low back pain.

Relationship Between Work Posture and Low Back Pain

The findings of this study show that among the 30 respondents with non-ergonomic work postures, 21 individuals (70.0%) reported experiencing low back pain (LBP), while the remaining 9 individuals (30.0%) did not report such complaints. In contrast, all 24 respondents who maintained proper body posture in accordance with ergonomic principles (100%) reported no LBP complaints. These results indicate that improper work posture significantly contributes to the higher prevalence of LBP among employees. The researcher assumes that the quality of body posture during work, whether correct or incorrect, has a direct impact on an individual's

health condition. Poor posture or non-ergonomic work positions may lead to various musculoskeletal complaints, including low back pain, as experienced by the majority of respondents in the group with poor work posture.

Improper body posture that does not follow ergonomic principles during work can lead to fatigue and discomfort, especially when maintained for long durations. Prolonged standing may result in leg pain, general muscle weakness, and complaints of low back pain. When the arms are fully extended, the shoulder and elbow joints reach their maximum range, which may cause strain. Repetitive activities such as pulling or lifting objects while excessively bending or working against gravity also pose a high risk of muscle injury or musculoskeletal disorders. Various body positions at work, such as bending forward or backward, twisting movements, or reaching for objects above the shoulders, behind the body, or bending the wrists, can create excessive pressure on muscles and other body tissues. Conversely, when body parts used for work remain close to the body's center, the risk of tension and strain on tendons and nerves can be minimized. Thus, prolonged use of non-ergonomic postures is a major contributing factor to the development of musculoskeletal complaints.

Although some respondents maintained proper working postures, low back pain (LBP) was still reported by a portion of them, which is likely influenced by multiple factors. One possible cause is prolonged sitting, which even when performed with correct posture can still lead to muscle stiffness and excessive pressure on the spinal area. In addition, weakness of the core muscles, which serve as the main support for the spine, increases the risk of strain in the lower back. A history of injury or structural disorders such as herniated nucleus pulposus (HNP) and scoliosis may also contribute to pain regardless of ergonomic posture. Other aggravating factors include limited physical activity, stress that triggers muscle tension, and medical conditions such as osteoarthritis and osteoporosis. Daily habits outside the workplace, including poor sleeping positions, improper lifting techniques, and excess body weight, can further burden the back. Moreover, the use of inadequate seating surfaces and degenerative processes associated with aging also contribute to back pain complaints. Therefore, even when work posture is appropriate, a combination of these multifactorial elements may still lead to LBP, highlighting the importance of comprehensive preventive and management strategies.

This perspective is reinforced by the theory which states that work posture refers to body positions during work that cause certain parts of the body to move away from their natural alignment. Examples of such conditions include raising the arms too high, bending the back excessively, or lifting the head beyond its ideal position. The greater the distance between body position and the center of gravity, the higher the risk of musculoskeletal complaints. These unnatural working postures are generally the result of job demands that do not align with an individual's physical capacity and limitations (Iridiastadi & Yassierli, 2017).

The statistical test using the Asymp. Sig (2-sided) value produced a p of 0.000, which is smaller than the significance level $\alpha = 0.05$. Therefore, the null hypothesis (H_0) is rejected, indicating a significant relationship between work posture and low back pain complaints among civil servants at the Batauga Community Health Center, South Buton Regency. The researcher assumes that non-ergonomic body positions during work have a considerable impact on both comfort and health. Improper work

posture often leads to discomfort, including low back pain complaints. However, some respondents with non-ergonomic postures did not report such complaints, which is likely due to preventive measures they adopted, such as maintaining proper sitting, standing, and walking posture; using chairs that provide adequate lumbar support; and avoiding slouching positions when working at a desk or using a computer.

These findings are in line with the theory proposed by Almoallim in Guesteva et al. (2021), which states that low back pain (LBP) complaints may be triggered by work-related factors such as excessive workload, non-ergonomic body posture, and repetitive movements. Musculoskeletal complaints such as pain in the neck, back, and waist often arise from prolonged sitting in improper positions, leading to stiffness and static muscle strain. Furthermore, frequent forward bending movements and the use of incorrect lifting techniques may increase the risk of pain in various parts of the body, including the back, arms, joints, and other muscle tissues. This risk becomes even greater when work is performed in prolonged sitting positions without sufficient stretching or breaks.

These results are consistent with the study conducted by Annissa et al. (2024), which found a significant relationship between work posture and low back pain among sewing workers, with a p-value of 0.000. Supporting this evidence, Muslim et al. (2021) reported that sewing workers who worked more than 8 hours per day had a higher risk of experiencing low back pain compared to those who worked fewer hours. Additionally, Kamariah et al. (2020) emphasized that prolonged sitting, improper body posture during work, and excessive work intensity are among the key factors contributing to the occurrence of low back pain complaints.

4. Conclusion

Based on the results of data collection, processing, analysis, and interpretation, several important conclusions can be drawn. First, the statistical analysis showed that the p value of 0.000 was smaller than the significance level of $\alpha = 0.05$, which led to the rejection of the null hypothesis (H_0). This finding indicates that there is a significant relationship between working duration and low back pain complaints among civil servants at the Batauga Community Health Center, South Buton Regency. The results suggest that employees with longer working hours are more likely to experience low back pain compared to those with shorter working hours, highlighting the importance of managing workload and ensuring proper rest periods. Second, the statistical test results also revealed that the p value of 0.000 was below the α threshold of 0.05, which again resulted in the rejection of the null hypothesis (H_0). This outcome confirms that there is a significant association between work posture and low back pain complaints among civil servants at the Batauga Community Health Center. Employees with non-ergonomic postures were found to have a higher prevalence of low back pain compared to those who worked with proper ergonomic alignment. These findings emphasize the need for ergonomic interventions, posture training, and supportive workplace facilities to minimize the risk of musculoskeletal disorders and improve occupational health.

References

- Annissa, A., Aulia, A., & Mathofani, P. E. (2024). Hubungan Posisi Kerja dengan Keluhan Nyeri Punggung Bawah pada Penjahit. *Faletehan Health Journal*, 11(01), 67–73.

- Bento, T. P. F., dos Santos Genebra, C. V., Maciel, N. M., Cornelio, G. P., Simeão, S. F. A. P., & de Vitta, A. (2020). Low back pain and some associated factors: is there any difference between genders?. *Brazilian journal of physical therapy*, 24(1), 79-87.
- Carregaro, R. L., Tottoli, C. R., Rodrigues, D. D. S., Bosmans, J. E., da Silva, E. N., & van Tulder, M. (2020). Low back pain should be considered a health and research priority in Brazil: Lost productivity and healthcare costs between 2012 to 2016. *PloS one*, 15(4), e0230902.
- Chinedu, O. O., Henry, A. T., Nene, J. J., & Okwudili, J. D. (2020). Work-related musculoskeletal disorders among office workers in higher education institutions: A cross-sectional study. *Ethiopian journal of health sciences*, 30(5).
- Fabanjo, I. J., Hendrik, H., Arpandjaman, A., Saputra, M. K. F., & Auliah, R. (2024). Faktor Yang Berhubungan Dengan Keluhan Low Back Pain Pada Pekerja Pengrajin Batu Bata. *Ensiklopedia of Journal*, 6(3), 174–178.
- Guesteva, V. C., Anggraini, R. A., Maudi, L. P., Rahmadiani, P. Y., & Azzahra, N. (2021). Faktor-Faktor Penyebab Kejadian Low Back Pain Pada Pekerja Kantoran: Systematic Review. *Jurnal Ilmiah Kesehatan Masyarakat: Media Komunikasi Komunitas Kesehatan Masyarakat*, 13(3), 151–159.
- Ijaz, M., Akram, M., Ahmad, S. R., Mirza, K., Ali Nadeem, F., & Thygerson, S. M. (2020). Risk factors associated with the prevalence of upper and lower back pain in male underground coal miners in punjab, pakistan. *International Journal of Environmental Research and Public Health*, 17(11), 4102.
- Illahi, M. A. A., Pratiwi, A. D., & Nurfadillah, S. (2024). Faktor-Faktor Yang Berhubungan dengan Kejadian Low Back Pain (LBP) Pada Pekerja di PLTU NII Tanasa Kendari. *MAHESA: Malahayati Health Student Journal*, 4(2), 637–649.
- Kamariah, K., Arifin, A., & Setiadi, G. (2020). Posisi Kerja Dengan Keluhan Nyeri Punggung Bawah Pada Penjahit Pakaian. *JURNAL KESEHATAN LINGKUNGAN: Jurnal Dan Aplikasi Teknik Kesehatan Lingkungan*, 17(1), 5–10.
- Kasa, A. S., Workineh, Y., Ayalew, E., & Temesgen, W. A. (2020). Low back pain among nurses working in clinical settings of Africa: systematic review and meta-analysis of 19 years of studies. *BMC musculoskeletal disorders*, 21(1), 310.
- Kasumawati, F., Adha, M. Z., Azizah, F. N., Ramuni, K., & Katta, R. (2020). Correlation Between Length of Work and Work Posture With Low Back Pain Complaint among Back Office Employees at X Hospital Serpong District, South Tangerang, Indonesia. *Malaysian Journal of Medicine & Health Sciences*, 16.
- Kemenkes RI. (2018). Hasil Utama Riset Kesehatan Dasar (Riskesdas) 2018. *Jakarta: Kementerian Kesehatan RI*.
- Kurnia, F., & Sobirin, M. (2020). Analisis Tingkat Kualitas Postur Pengemudi Becak Menggunakan Metode RULA dan REBA. *Jurnal Engine: Energi, Manufaktur, Dan Material*, 4(1), 1–5.
- Latipah, S., Sa'adah, N. S., & Ahmad, S. N. A. (2022). Determinan Lama Duduk Dan Posisi Duduk Pada Kejadian Low Back Pain Karyawan Pabrik Sablon. *Jurnal JKFT*, 7(1), 8–16.

- Lee, J. H., Lee, J., & Lee, K. S. (2020). Moderated mediation effect of mindfulness on the relationship between muscular skeletal disease, job stress, and turnover among Korean firefighters. *Safety and Health at Work*, 11(2), 222-227.
- Mahfira, S., & Utami, T. N. (2021). Hubungan Sikap Kerja Dengan Keluhan Nyeri Punggung Bawah Pada Penenun Tradisional di Kabupaten Batubara. *PREPOTIF: Jurnal Kesehatan Masyarakat*, 5(2), 945–952.
- Morris, P., Ali, K., Merritt, M., Pelletier, J., & Macedo, L. G. (2020). A systematic review of the role of inflammatory biomarkers in acute, subacute and chronic non-specific low back pain. *BMC musculoskeletal disorders*, 21(1), 1-12.
- Muslim, B., Devira, S., Seno, B. A., Darwel, D., & Erdinur, E. (2021). Hubungan Durasi Kerja dan Postur Tubuh Dengan Keluhan Low Back Pain (LBP) Penjahit di Nagari Simpang Kapuak Kabupaten Lima Puluh Kota. *Jurnal Sehat Mandiri*, 16(2), 138–146.
- Notoatmodjo, S. (2018). Metodologi Penelitian Kesehatan. *Jakarta: Rineka Cipta*.
- Santi, D. B., Barbieri, A. R., & Cheade, M. D. F. M. (2018). Sicknes absenteeism within the Brazilian public service: integrative literature review. *Rev Bras Med Trab*, 16(1), 71-81.
- Sugiyono. (2017). Metode Penelitian Kuantitatif, Kualitatif dan R& D. In *Bandung: Alfabeta*.
- Susanti, N. (2019). Pengaruh Terapi Pijat Stimulus Kutaneus Slow-Stroke Back Massage Terhadap Intensitas Nyeri Pada Penderita Low Back Pain (Lbp) Di Poliklinik Rehabilitasi Medik Rsud Embung Fatimah Batam Tahun 2018. *Al-Asalmiya Nursing: Jurnal Ilmu Keperawatan (Journal of Nursing Sciences)*, 8(1), 1–7.
- Wami, S. D., Abere, G., Dessie, A., & Getachew, D. (2019). Work-related risk factors and the prevalence of low back pain among low wage workers: results from a cross-sectional study. *BMC public health*, 19(1), 1072.