HTechJ Health and Technology Journal (HTechJ)

Volume 01 Number 06
December 2023
p-ISSN: 2986-5662
e-ISSN: 2985-959X

Positioning Techniques for Stroke Infarction Patients to Prevent Decubitus Wounds

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Abstract:
Stroke is one of the leading causes of death and neurological impairment in Indonesia. This brain attack is a medical emergency that must be treated quickly, precisely, and carefully. This research aims to determine the effect of positioning techniques on the incidence of decubitus in stroke infarction patients. The research design used was a pre-experiment with a static group comparison design approach. The sampling technique used in this research was purposive sampling, with a total sample of 24 respondents. The treatment group consisted of 12 respondents, and the control group consisted of 12 respondents. After being evaluated for a month, the Chi-Square test results were obtained with a p-value of 0.013, which means less than 0.05; this means there is an influence between positioning and the incidence of pressure ulcers. In the treatment group, the results showed that ten respondents did not experience pressure ulcers after treatment; in the control group, eight suffered from pressure ulcers. This can occur due to patient compliance and the surrounding environment in activities such as tilting left and right to prevent pressure ulcers. This positioning action, carried out between 2-3 hours can make blood circulation in the body run smoothly, so this can reduce the incidence of pressure ulcers in patients who are lying down in bed.

Article info:
Submitted:
27-11-2023
Revised:
07-12-2023
Accepted:
11-12-2023

Keywords:
positioning techniques; decubitus; nurse; infarction stroke

DOI: https://doi.org/10.53713/htechj.v1i6.132

INTRODUCTION

In infarction stroke patients, there is a disruption in the blood flow system. Both physical and psychological problems can occur due to immobility. One of the physical problems that can occur due to immobilization is decubitus wounds. Nurses, as health workers who are responsible for preventing unexpected events, including pressure ulcers, need to apply the best knowledge they have in preventing the development of the disease they have (Putri & Afandi, 2022). Stroke patients with impaired mobility who experience bed rest for a long time without being able to change position will be at high risk of developing pressure ulcers. Apart from that, patients who stay in bed for a long time can reduce muscle tone in their body, reducing the effectiveness of muscle work (Gisbreng, 2008; Fauzi et al., 2022).

According to the Health Research and Development Agency (2015), the prevalence of stroke in Indonesia is 12.1% per 1000 population. According to data from the East Java Provincial Government Health Service in 2013, the prevalence of stroke based on the diagnosis of health workers (Nakes) in East Java was 6.6%. Meanwhile, for stroke, based on diagnosis/symptoms, the prevalence is 10.5%. Of the total number of stroke sufferers in Indonesia, around 2.5% or 250,000 people died, and the rest had mild or severe disabilities. Based on a study, the incidence of

pressure ulcers in international studies(is 1.9-63.6%); in other ASEAN (Japan, Korea, China), 2.1-18%; in Indonesia, it is quite high, namely 33.3% (Sihombing, 2016). According to data from the 2016 Indonesian Population and Demographic Census (SKDI), the results of pressure ulcers in Indonesia are generally reported to be 5-11% in acute care, 15-25% in long-term care, and 7-12% in home care settings. According to Agustina & Rasyid (2020), research results in the United States show that stroke patients treated in hospitals suffer from 3-10% pressure ulcers, and there is a 2.7% chance of developing new pressure ulcers.

Stroke is a disease where there is a disruption in blood circulation in the brain, resulting in sudden neurological deficits (Helen et al., 2021). Stroke is a health disorder that causes movement disorders in the sufferer due to loss or decrease in muscle function (Abdillah et al., 2022). Stroke is an acute local or global functional disorder of the brain with symptoms and signs according to the part of the brain affected, which occurs without warning and can recover completely, with disability or death, due to disruption of blood flow to the brain due to bleeding or non-bleeding (Junaidi, 2011). Patients often experience difficult-to-avoid sequelae after a stroke; One of the impacts that can occur after a stroke is the emergence of cognitive disorders, physical disabilities, and even death due to the severity of the brain damage that occurs (Dewi et al., 2023). This disorder can cause various kinds of symptoms, one of which is motor and sensory disorders, including hemiparesis. Pressure sores on bony prominences cannot be avoided; areas such as the coccyx, back, pelvis, and heels are the most common places for pressure sores to occur (Fatonah et al., 2016). One of the causes of stroke is decubitus wounds, as a result of damage or death of the skin to the tissue under the skin, even penetrating the muscles to the bones due to continuous pressure on an area, resulting in disruption of local blood circulation (Alimansur & Santoso, 2019). Decubitus wounds can have an impact, one of which is that if the skin is injured or torn, new problems will arise, namely infection. Infection slows the healing of shallow ulcers and can result in fatal sepsis (Puspitosari et al., 2021).

Positioning is using the body efficiently, not using much energy, being coordinated and safe in moving, and maintaining balance during activities. Besides paying attention to and keeping patients safe and comfortable, nurses' duties are to provide good information to increase patient knowledge (Putri et al., 2022; Afandi et al., 2023). The patient's lying position should be sought to be comfortable if no circumstances force the patient to adopt another lying position. For patients who cannot move independently due to paralysis or fainting, position adjustments must be made every 2-3 hours so blood flow runs smoothly. Adjusting or changing positions is also helpful for avoiding pressure ulcers (decubitus) and preventing the shortening of muscles and ligaments. If positioning is not done, areas of skin that are continuously under pressure can disrupt blood flow. The nurse must lift the client using proper positioning techniques to maintain proper body alignment and move the client safely. This research aims to determine the effect of positioning techniques on the incidence of decubitus in stroke infarction patients.

METHOD

This research used a pre-experimental design with a static-group comparison design approach. Static-group comparison design is research that aims to determine the effect of an action on a group of subjects who received treatment and then compare it with a group of subjects who did not receive treatment. The population in this study were patients undergoing inpatient treatment in the Mawar Room, Caruban Madiun Regional Hospital. The sample obtained during the research was 24 respondents. The sampling technique used was purposive sampling. The inclusion criteria in this study were clients who experienced physical weakness, clients without

Volume 01 Number 06
December 2023
p-ISSN: 2986-5662
e-ISSN: 2985-959X

decubitus wounds, and were willing to be respondents. The exclusion criteria in this study were clients with decreased consciousness and stroke infarction clients with unstable blood pressure. The sample consisted of 24 respondents who were divided into 2 groups; the treatment group with odd numbers had 12 respondents, and the control group had even numbers with 12 respondents.

RESULT

The results of this study were divided into 2 groups, namely treatment and control. The presentation will be presented with a pie chart divided into two types of data: general and unique. General data consists of data on respondent characteristics; special data consists of independent and dependent variables.

General data

1. Treatment group
   a. Age

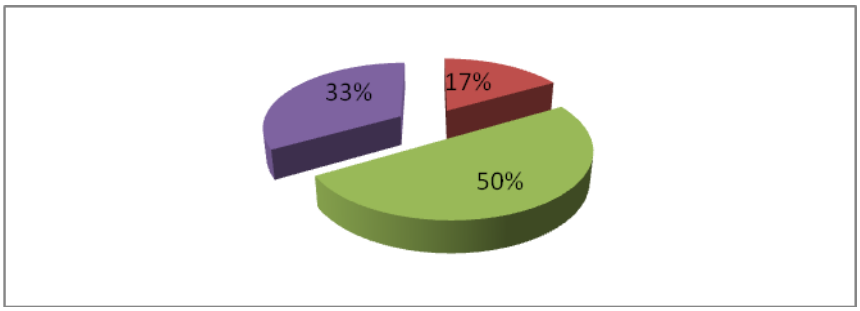

Figure 1. Age of Treatment Respondents

Based on Figure 1, data shows that half of the respondents are aged 51-60 years, namely 6 respondents (50%) of the total respondents, at the age of 36-50 years there are 2 respondents (17%) and over 61 years there are 4 respondents (33%).

   b. Gender

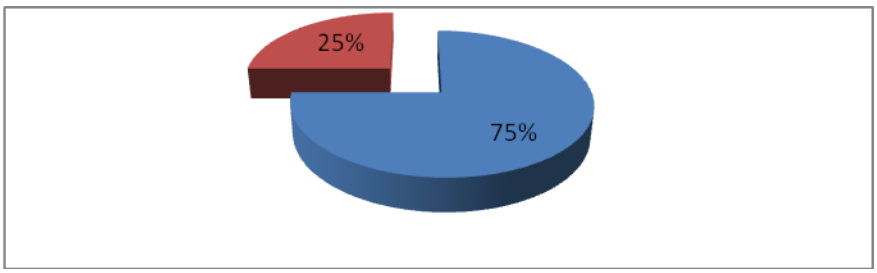

Figure 2. Gender of Treatment Respondents

Based on Figure 2, data shows that the majority of respondents are male, namely 9 respondents (75%) of the total respondents, the remaining 3 respondents are female (25%).

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c. Work

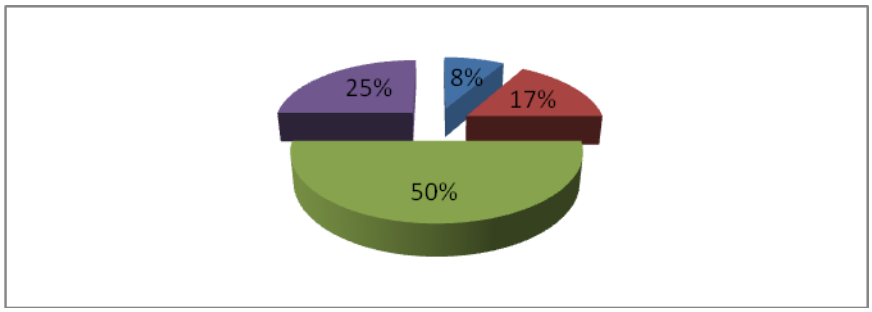

Figure 3. Occupation of Treatment Respondents

Based on Figure 3, data shows that half of the respondents work as farmers, namely 6 respondents (50%) of the total respondents. The remaining 3 respondents work as housewives (25%), 2 respondents work as entrepreneurs (17%) and 1 respondent as a State Civil Apparatus (8%).

d. Education

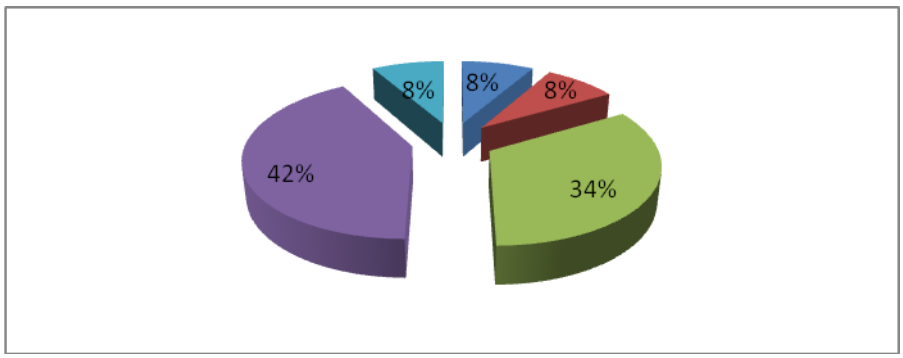

Figure 4. Education of Treatment Respondents

Based on Figure 4, data shows that almost half of the respondents had a high school education, namely 5 respondents (42%) of the total respondents, while 4 respondents (34%) were junior high school graduates. The remaining 1 respondent was an elementary school graduate (8%), 1 respondent was a college graduate (8%), and 1 respondent had no school (8%).

e. Long treated

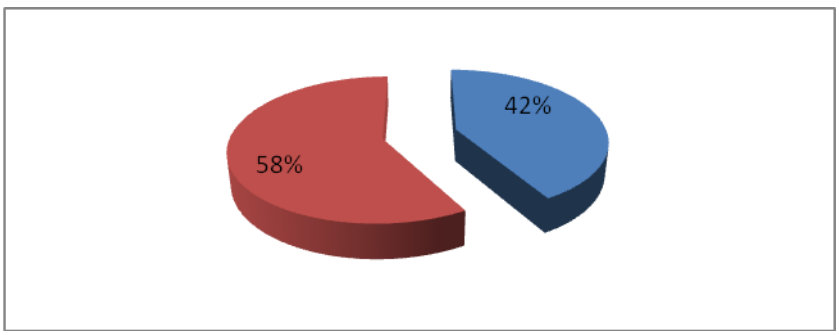

Figure 5. Length of Treatment Respondent Treatment

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e-ISSN: 2985-959X

Based on Figure 5, data shows that most respondents were treated for more than 1 week, namely 7 respondents (58%) of the total respondents.

2. Control group
   a. Age

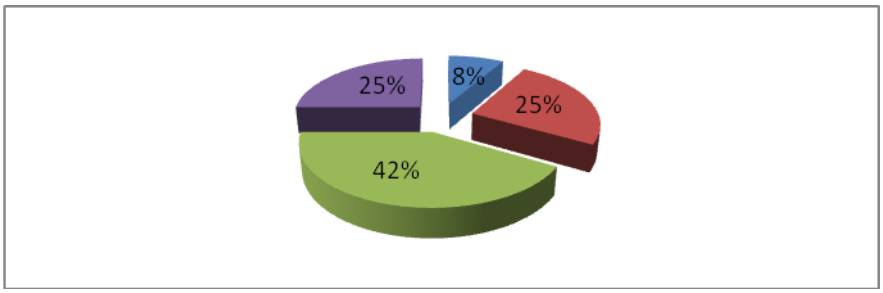

Figure 6. Age of Control Respondents

Based on Figure 6, data was obtained that almost half of the respondents were aged 51-60 years, namely 5 respondents (42%), while those aged 36-50 years and those aged over 61 years were 3 respondents (25%). The age of the respondents was under 36 years, as much as 1 respondent (8%).

   b. Gender

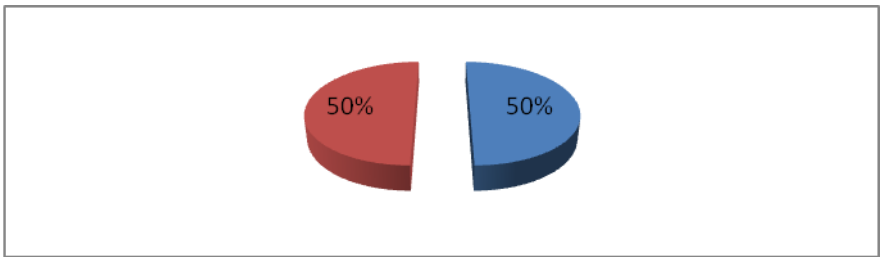

Figure 7. Gender of Control Respondents

Based on Figure 7, the data shows that half of the respondents are male and female, namely 6 respondents each (50%) of the total respondents.

   c. Work

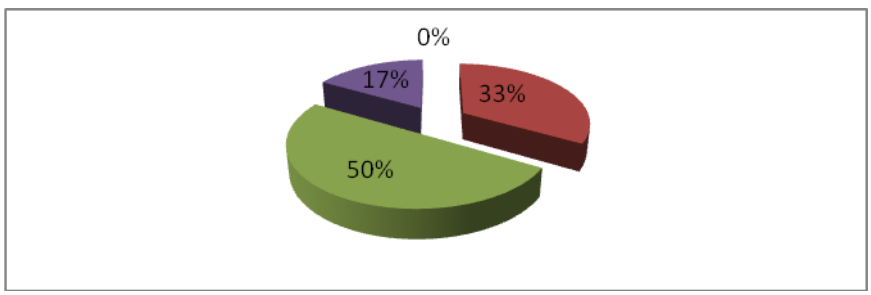

Figure 8. Occupation of Control Respondents

Based on Figure 8, data shows that half of the respondents work as farmers, namely 6 respondents (50%) of the total respondents. A total of 4 respondents (33%) had self-

employed jobs, and 2 respondents (17%) did not work. None of the control respondents were State Civil Apparatus.

d. Education

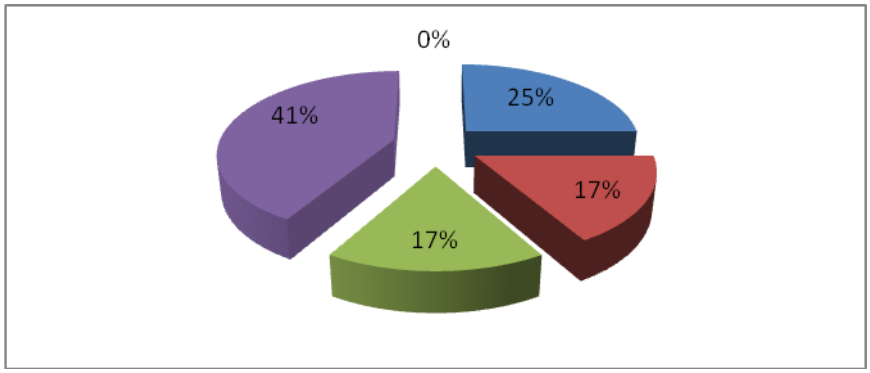

Figure 9. Education of Control Respondents

Based on Figure 9, data shows that the majority of respondents' education is high school, namely 5 respondents (41%), 2 respondents each graduated from junior high school and elementary school (17%), and 3 respondents (25%) have not attended school. In the control group, no one had an education up to university.

e. Long treated

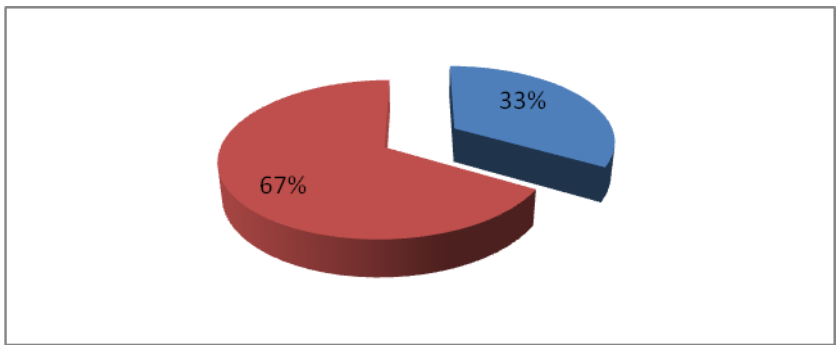

Figure 10. Length of stay for control respondents

Based on Figure 10, data shows that the majority of respondents were treated for more than 1 week, namely 8 respondents (67%) of the total respondents.

Custom Data

1. The incidence of decubitus wounds in treatment respondents

Table 1. Incidence of decubitus wounds in treatment groups

No	Decubitus Events	Amount	Percentage
1	No pressure sores occurred	10	83.33
2	Decubitus sores occur	2	16.67
	Total	12	100

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Based on table 1 shows that almost all of the respondents in the treatment group did not experience decubitus wounds, namely 10 respondents (83.33%) of the total respondents.

2. The incidence of decubitus wounds in control respondents

Table 2. Incidence of decubitus wounds in the control group

No	Decubitus Events	Amount	Percentage
1	No pressure sores occurred	4	33.33
2	Decubitus sores occur	8	66.67
	Total	12	100

Based table 2 shows that the majority of respondents in the control group had decubitus wounds, namely 8 respondents (66.67%) of the total respondents.

3. The influence of positioning techniques on the occurrence of decubitus wounds (Treatment and Control)

Table 3. Cross-tabulation of the effect of positioning techniques on the incidence of decubitus wounds

No	Decubitus Events	Treatment Group		Control Group	
		Amount	Percentage	Amount	Percentage
1	No injuries occurred	10	83.33	4	33.33
2	An injury occurred	2	16.67	8	66.67
	Total	12	100	12	100

*Test Chi-Square obtained p value = 0.013 ≤ α = 0.05

Based on table 3 shows a comparison of the incidence of pressure ulcers in the treatment and control groups. In the treatment group, almost all of the respondents did not experience pressure ulcers, namely 10 respondents (83.33%); in the control group, it was found that most respondents experienced pressure sores, namely 8 respondents (66.67%). Test Chi-Square obtained p value = 0.013 ≤ α = 0.05, so Ha accepts there is an influence of positioning on the occurrence of decubitus wounds in stroke infarction patients in the Mawar Room, Caruban Madiun Regional Hospital.

DISCUSSION

Demographic factors that influence the occurrence of decubitus ulcers include age, immobility and inactivity, malnutrition, skin temperature and pH and chronic diseases (Carville, 2012). Older patients have a high risk of developing pressure ulcers. According to Aini and Purwaningsih (2014), old age has great potential for pressure ulcers because skin changes related to increasing age include reduced subcutaneous fat tissue, reduced collagen and elastic tissue, decreased efficiency of capillary collaterals in the skin so that the skin becomes thin and fragile. The tendency of elderly people to develop pressure ulcers easily can be prevented by positioning. According to Buijck and Ribbers (2016), positioning is used in patients who experience impaired skeletal and nervous system function and increased weakness and stiffness. The aim of adjusting

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the patient's position is to provide comfort to the patient, maintain or maintain good body posture, and avoid complications that may arise due to bed rest.

Even though the respondents' ages were in the elderly category, the research results for the treatment group showed very minimal pressure ulcers. This cannot be separated from the treatment by position adjustments every 2 hours. Adjusting positions every 2 hours, such as sim position, pronation, and supination in the treatment group, had an excellent impact on the patient's blood circulation and prevented friction due to prolonged bed rest (Kostov, 2016). Even though, in this study, the influence of work is that of being a farmer, nothing in the literature states that a person's work can prevent pressure ulcers.

Most of the respondents in the control group were elderly. In the elderly, over time, there is a decline in body function, such as loss of muscle mass and a decrease in skin elasticity. Elderly people who experience a stroke will not be able to mobilize properly and will even tend to be immobilized. Pressure on the body and friction with the bed, supported by decreased body function, will make pressure sores occur more easily. The lack of movement to move in bed will risk increasing the incidence of pressure ulcers (Oktarina & Mulyani, 2020). This was proven by the higher incidence of pressure ulcers than the treatment group, which was given more regular movement in bed.

According to Sulasmi et al. (2015), positioning is used in patients who experience impaired skeletal and nervous system function and increased weakness and stiffness. Adjusting the patient's position is to provide comfort, maintain or maintain good body posture, and avoid complications that may arise due to bed rest (Lestari et al., 2021). This change in sleeping position is carried out to change the body's pressure in certain areas so that there is no imbalance in body weight at one point, which can cause disruption of blood circulation in the stressed area (Khoiroh et al., 2020). Positioning can prevent decubitus in prominent bone areas, which aims to reduce pressure due to the patient being stuck in a particular sleeping position, which can cause lesions/scratches.

The positioning carried out by the researchers was proven to have a good effect on the occurrence of decubitus wounds. This is because blood circulation will be smooth, reducing friction and pressure at one point in the body. Reduced friction and pressure and smooth blood circulation will compensate for reduced body functions, minimizing the risk of pressure ulcers.

CONCLUSION

Based on the results of the analysis and discussion, it can be concluded that there is an influence of positioning techniques on the incidence of decubitus wounds in patients treated with a medical diagnosis of stroke. The incidence of decubitus wounds can be minimized by optimizing positioning techniques for clients every 2-3 hours.

CONFLICT OF INTEREST

In this research, there is no conflict of interest.

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