ISSN 2354-8428
e-ISSN 2598-8727

JURNAL KEPERAWATAN

KOMPREHENSIF

COMPREHENSIVE NURSING JOURNAL

Published by :

Sekolah Tinggi Ilmu Keperawatan
PPNI Jawa Barat

Vol. 11 No. 1, January 2025

JURNAL KEPERAWATAN KOMPREHENSIF	VOL. 11	NO. 1	Bandung January 2025	ISSN 2354-8428	e-ISSN 2598-8727

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

Jurnal Keperawatan Komprehensif
Volume 11 Issue 1 January 2025

Research Article

Overcoming Constipation in Stroke Patients Using the I Love You and Swedish Massage Techniques

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Received : 10/10/2024
Revised : 19/11/2024
Accepted : 16/01/2025
Online : 25/01/2025
Published : 25/01/2025

Abstract

Aims: This study aims to determine the effectiveness of a combination of the I LOVE YOU and Swedish techniques in relieving constipation in stroke patients.
Methods: This study employed a quasi-experimental design with a pre-post test in a single-group setting, involving 30 stroke patients. The intervention consisted of abdominal massage therapy using a combination of the I LOVE YOU and Swedish techniques, applied twice daily for 30 minutes over three consecutive days. The Bristol Stool Scale and a 5-point Likert scale for patient constipation assessment were used to measure outcomes. Descriptive statistics and the Wilcoxon test were applied to analyze the data.
Results: The findings indicated that the combination of the I LOVE YOU and Swedish techniques significantly improved bowel movements and reduced constipation in stroke patients, as evidenced by the Wilcoxon test results.
Conclusion: This study demonstrates that non-pharmacological abdominal massage techniques using the I LOVE YOU and Swedish methods can serve as effective alternatives for managing constipation in stroke patients.

Keywords:
Constipation, long term care, massage, stroke, word

INTRODUCTION

Stroke is one of the leading causes of death worldwide. According to WHO, in 2015, stroke was among the top 10 causes of 56,400,000 deaths, accounting for 54% (1). The prevalence of stroke in Indonesia increased from 7% in 2013 to 10.9% in 2018(2).Stroke occurs when there is a rupture of blood vessels in the brain or a decrease in blood supply to the brain, resulting in fatal damage. The effects of ruptured blood vessels vary depending on the area of blockage(3). Stroke patients often experience balance disturbances, muscle issues, and prolonged immobilization. Long-term immobilization leads to digestive problems such as constipation(4,5).

Constipation is a condition where a person experiences difficulty or infrequent bowel movements, characterized by hard stools. Bowel evacuation becomes impaired, causing stool buildup, and excess water absorption makes the stool hard and difficult to pass. Stroke patients need to have regular bowel movements, ideally every 2-3 days; if bowel movements occur fewer than three times a week, it is considered constipation. The incidence of

https://doi.org/10.33755/jkk

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

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constipation in stroke patients in Korea in 2015 was 76% of 59 patients. In Taiwan, out of 155 stroke patients, 123 experienced constipation(6). In the study by Windahandayani (2021), it was shown that stroke patients often experience recurrent constipation. Approximately 60.6% of constipation incidents occurred in patients with non-hemorrhagic stroke. To address constipation symptoms in stroke patients and prevent recurrence, effective management is needed. Given that stroke is a condition that requires support or assistance from family for long-term care, it is crucial to provide appropriate interventions(7).

Constipation in stroke patients occurs due to changes in activity levels that slow down nerve impulses and decrease peristalsis in the large intestine. Abdominal muscle tone and strength also decrease. Stroke patients with swallowing difficulties often experience inadequate nutrition and fluid intake, which reduces the ability to soften stools(3). This leads to constipation, which, if not properly managed, can cause increased intracranial pressure during straining and may even lead to death. To address constipation, stroke patients often use laxatives or stool softeners. However, long-term use of laxatives can cause complications such as dehydration and disturbances in intestinal peristalsis. Stroke patients rely on both family and medical professionals to meet their toileting needs. Therefore, non-pharmacological interventions are needed to manage chronic constipation and prevent further complications.

Abdominal massage is performed on the abdomen or lower abdomen area. This technique applies gentle pressure to the skin, abdominal muscles, and surrounding tissues to relieve tension, improve blood circulation, and stimulate the internal organs of the digestive system. Abdominal massage is one of the long-term treatments that enhances the quality of life for stroke patients with constipation(8). Several studies have shown that abdominal massage with various techniques is effective in treating constipation in stroke patients or those bedridden for long periods(9,10). Several types of abdominal massage, such as Swedish massage and the 'I Love You' technique, can be used as forms of abdominal massage to relieve constipation(9,11). Swedish abdominal massage includes effleurage (initial touch with gliding on the surface tissues), petrissage (technique of stretching or kneading the surface), tapotement (repeated percussion manipulation), friction (rubbing the tissues to improve blood flow), and vibration, which involves vibrating the soft tissues(12). The 'I Love You' technique involves a massage where the letters I, L, U, and O are traced, moving from the small intestine to the colon(11,12). The use of massage techniques has been studied, with some showing significant results while others were inconclusive(13). Based on the background above, the researchers aim to conduct further research to determine the effectiveness of the combination of 'I Love You' and Swedish massage as long-term care to treat constipation in stroke patients. The hope is that the results of this study can be applied in long-term care settings for stroke patients.

METHODS

Design and Settings

This study was designed using a quasi-experimental post-test only method to assess the effectiveness of the 'I Love You' and Swedish techniques in addressing constipation in stroke patients. The research was conducted from July to August 2024.

Sample

The population in this study consisted of all stroke patients within the working area of community health center in south Denpasar. The sample was taken using a non-probability sampling technique with the consecutive sampling method. The

https://doi.org/10.33755/jkk

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

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inclusion criteria for this study were patients aged over 18 years, those experiencing constipation with complaints of no bowel movement for at least 2 days, with hard and small stool consistency. The exclusion criteria were patients receiving muscle relaxants, having impaired skin integrity in the abdominal area, internal bleeding, burns in the abdominal area, patients with intracranial pressure within the first 24 hours, and those with head injury.

Instrument

This study used the Bristol Scale and the Patient Assessment of Constipation (PAC-SYM). The Bristol Scale was used to assess stool form to determine the presence of constipation. The PAC-SYM consists of 12 statements that are measured over the past 7 days. There are 5 scoring levels (0-4) using a Likert scale. The total score ranges from 0 to 48.

Procedure

After determining the sample to be used based on the inclusion criteria, home visits were conducted to explain the research procedure. Subsequently, constipation was measured using the Bristol scale and an assessment of constipation over the past 7 days was carried out. Abdominal massage using the 'I Love You' and Swedish techniques was then administered for 30 minutes, twice a day, in the morning and evening before meals. The abdominal massage is performed by starting with 15 minutes of Swedish technique and 15 minutes of the 'I Love You' technique. This intervention was performed for three consecutive days, followed by a reassessment using a constipation assessment questionnaire. In this study, abdominal massage was performed entirely by the researcher because no training had been provided to caregivers. For future research, abdominal massage training for caregivers and a training module for caregivers will be developed.

Data analysis

The data were analysed using SPSS. Descriptive tests were conducted on the characteristics of the patients. For the pre-test and post-test scoring, data normality was tested using the Shapiro-Wilk test, followed by an effectiveness test using the Wilcoxon test.

Ethical clearance

This research has been declared ethically feasible by the Ethics Committee of Institution of Technology and Health Bali on July 03, 2024 with No. 04.0253/KEPITEKES-BALI/VII/2024.

RESULTS

Table 1. Distribution of socio-demographic subjects (n=30)

Socio-demographic characteristics	n	%
Age		
< 60 years	9	30
>60 years	21	70
Gender		
Male	16	53,3
Female	14	46,7
Stroke experience		
<10 years	28	93,3

https://doi.org/10.33755/jkk

p-ISSN : 2354 8428 | e-ISSN: 2598 8727
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>10 years	2	6,7
Use laxative		
Yes	30	100
Bristol Scale		
Type 1	23	76,6
Type 2	7	23,3

In table 1 show that Out of 30 respondents, the majority were over 60 years old, totalling 21 respondents (70%). Most of the respondents were male, with 16 respondents (53,3%). A total of 28 respondents (93,3%) had experienced a stroke within the last 10 years. All respondents (100%) were using laxatives. Measurements using the Bristol stool scale revealed that 23 respondents reported stool type 1 (separate hard lumps, like nuts/hard to pass), while 7 respondents reported stool type 2 (Sausage-shaped but lumpy).

Table 2. Distribution patient assessment constipation pre test and post test

PAC Questionnaire	Pre Test		Post Test	
	n	%	n	%
Discomfort in your abdoment				
Mild			6	20
Moderate	8	26,7	19	63,3
Severe	11	36,7	3	10
Very Severe	11	36,7	2	6,7
Pain in your abdomen				
Mild			14	46,7
Severe	14	46,7	16	53,3
Very severe	16	53,3		
Bloating in your abdomen				
Moderate	14	46,7	15	50
severe	14	46,7	13	43,3
Very severe	2	6,7	2	6,7
Stomach cramps				
Mild			8	26,7
Moderate	13	43,3	12	40
severe	14	46,7	10	33,3
Very severe	3	10		
Painful bowel movement				
Moderate			16	53,3
Severe			10	33,3
Very severe	30	100	4	13,3
Rectal Burning During or				

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After A bowel movement				
Moderate			18	60
Severe			11	36,7
Very severe	30	100	1	3,3
Rectal bleeding During or After A bowel movement				
Absent	7	23,3	7	23,3
Mild	9	30	10	33,3
Moderate	7	23	7	23,3
severe	5	3	4	13,3
Very severe	2	6,7	2	6,7
Imcomplete bowel movement				
Moderate			1	3,3
severe	19	63,3	19	63,3
Very severe	11	36,7	10	33,3
Bowel movement that were too hard				
Moderate			16	53,3
severe	7	23,3	8	26,7
Very severe	23	76,7	6	20
Bowel movement that were too small				
Moderate			16	53,3
severe	1	3,3	10	33,3
Very severe	29	96,7	4	13,3
Straining or squeezing to try to pass bowel movements				
severe	17	56,7	22	73,3
Very severe	13	43,3	8	26,7
Feeling like you had to pass a bowel movement but you couldn't				
Moderate			7	23,3
SEvere			10	33,3
Very severe	30	100	13	43,3

Before the intervention, many respondents experienced significant constipation-related discomfort. Discomfort or severe discomfort was reported by 11 respondents (36.7%), while abdominal pain was experienced by 14 respondents (46.7%) and intense pain by 16 respondents (53.3%). Bloating affected almost all participants, with 28 respondents (93.4%)

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

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reporting it, and 2 respondents (6.7%) describing it as extreme. Additionally, cramps were noted by 17 respondents (56.7%). All respondents (100%) experienced pain and burning sensations during defecation, with an urge to defecate but without success. In terms of blood in stools, 7 respondents (23.3%) reported no bleeding, while 23 respondents (76.7%) experienced mild to severe bleeding. Incomplete bowel movements were frequent, with 19 respondents (63.3%) reporting it often and 11 respondents (36.7%) always experiencing it. Hard stools were common, with 7 respondents (23.3%) experiencing them occasionally, and 23 respondents (76.7%) always. Almost all (96.7%) passed small stools, with 56.7% frequently and 43.3% always straining during defecation. None of the respondents reported bowel movements for 4-7 days.

After the intervention, there were notable improvements. Discomfort in the abdominal area decreased to mild or moderate levels for 6-19 respondents (20-63.3%). Abdominal pain became mild in 14 respondents (46.7%) and moderate in 16 respondents (53.3%). Bloating persisted at moderate levels for half of the participants (50%), while others experienced severe or very severe bloating. Cramps were mild for 8 respondents, moderate for 12, and severe for 10 (33.3%). Pain during defecation decreased to moderate for 16 respondents, severe for 10, and very severe for 4. The burning sensation also improved, with 18 respondents reporting it as moderate, 11 as severe, and 1 as very severe. Bleeding in stools remained at similar levels as pre-test. Incomplete bowel movements continued for 19 respondents (63.3%), and hard and small stools were still reported by 16 respondents (53.3%). Severe straining during defecation persisted for 22 respondents (73.3%). However, most participants reported bowel movements by the second or third day after the intervention, indicating a positive outcome.

Table 3. effectiveness combination I love you and Swedish technique to reduce constipation in stroke patients.

Variable	Median (Min-max)	Saphiro wilk (P Value)	Wilcoxon test (P value)
Pre test	39,00 (36-43)	0,019	0,000
Post test	31,00 (26-35)	0,789	

Table 3 shows that the pre-test scores had a median of 39.00 (36-43), while the post-test scores had a median of 31.00 (26-35). Normality tests were conducted for both the pre-test and post-test data, revealing that the pre-test data was not normally distributed (p-value < 0.05), while the post-test data was normally distributed (p-value > 0.05). The Wilcoxon test results indicated a p-value < 0.05, with the interpretation that the combination of the I LOVE YOU technique and Swedish massage was effective in addressing constipation in stroke patients.

DISCUSSION

Constipation in stroke patients is a common occurrence, especially when patients are unable to perform active mobilization or are bedridden for extended periods(14). Constipation is characterized by abnormal defecation patterns, and the hardening of stool, making it difficult for patients to pass bowel movements. Hard stools in stroke patients occur due to limited movement, particularly in the abdomen and pelvic area. The lack of movement in these areas causes stool to remain longer in the large intestine, leading to increased water absorption, which in turn hardens the stool. As a result, patients often experience abdominal and rectal pain during defecation, and in severe cases, it can even cause rectal bleeding. Stroke also causes autonomic nervous system disturbances, hindering the intestinal peristaltic contractions(15). Additionally, stroke patients are affected by medications such as antihypertensives and antidepressants, which can contribute to constipation. Inadequate intake of fluids

https://doi.org/10.33755/jkk

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

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and Fiber, as well as swallowing difficulties, are also factors that support the occurrence of constipation in stroke patients(16). Constipation in stroke patients can persist for a long period, impacting their quality of life. Due to their inability to mobilize and fulfil basic needs, stroke patients require long-term care provided by their caregivers.

This study's results show that the majority of respondents were over 60 years old, suffered from stroke with constipation, and had experienced a stroke for less than 10 years. The use of laxatives was also reported, yet constipation persisted, as indicated by stool resembling small, hard pellets, making it difficult to pass. Similar studies by Ding (2022) and Osama (2019) also demonstrated that individuals over the age of 50 or older have an increased incidence of constipation in stroke patients(15,17). Regarding gender variables, the findings of this study are consistent with research by Muhammad (2023), which showed that both men and women are equally likely to experience stroke(14).

In addressing long-term constipation, laxatives are often cited as the main treatment(18). However, prolonged use of laxatives comes with side effects, such as the intestines losing their natural peristaltic movement, and the cost of continuous laxative use can be a financial burden. In this study, all respondents reported using laxatives continuously, yet constipation persisted, as evidenced by no bowel movement for over three days and difficulty passing stools(16).

In the context of long-term care, prolonged use of pharmacological treatments negatively impacts the quality of life for stroke patients. Non-pharmacological interventions must be committed to by caregivers. For constipation, abdominal massage is considered free of side effects (Yue, 2020). Abdominal massage can have physical, neurological, psychological, and biomechanical effects on body tissues(19). This study showed the effectiveness of reducing constipation scores after being given the combination of the I LOVE YOU and Swedish massage techniques. The I LOVE YOU abdominal massage involves circular movements on the abdomen, stimulating the smooth muscles of the intestinal walls and promoting peristaltic movement. This movement helps push the stool toward the rectum, allowing it to move more quickly through the large intestine and reducing water absorption, which helps maintain stool softness(11).

Abdominal massage also improves the tone of smooth muscles in the digestive tract, which is essential for optimal motility. The Swedish technique, which focuses on gentle pressure in certain areas of the abdomen, increases intra-abdominal pressure, aiding in the propulsion of stool toward the rectum(9,10). Physiologically, abdominal massage helps relieve tension in the abdominal muscles. Stroke patients often experience pain or discomfort associated with constipation. When the muscles relax, peristaltic movement in the intestines can work more effectively. Abdominal massage also increases blood flow to the large intestine, ensuring oxygen and nutrients reach the intestinal tissues, supporting cellular function and enhancing intestinal muscle contractions. Improved circulation is expected to aid in the smooth elimination of stool(4,5,8).

Stroke patients also suffer from damage to the parasympathetic nerves. The I LOVE YOU and Swedish abdominal massage techniques stimulate the parasympathetic system to increase digestive enzyme production and intestinal motility. This activation helps the body relax and focus on digestive functions, including bowel movements(11). Aydinli and Karadag (2023) added that abdominal massage can incorporate aromatherapy using ginger and lavender oils. This approach can enhance the effectiveness of abdominal massage and make patients feel more comfortable and relaxed (20).

The limitation of this study is the research method, which lacks the use of a control group due to the relatively small number of

https://doi.org/10.33755/jkk

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

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patients in the area. Therefore, it is necessary to expand the sample size in other locations with characteristics similar to the intervention group.

CONCLUSION

The results of this study indicate that abdominal massage, combining the "I love you" technique and Swedish massage, can reduce constipation in stroke patients. The frequency of defecation can increase when therapy is administered consistently. This also supports the reduction of laxative dosage in stroke patients with constipation complications. The results of this study can serve as a basis for training caregivers to assist stroke patients experiencing constipation during bowel movements. In the field of education, it is also necessary to develop training modules for caregivers to provide long-term care for stroke patients.

IMPLICATION

Abdominal massage using the combination of the "I love you" technique and Swedish massage can be applied to address constipation in stroke patients as a long-term care approach. Nurses can implement this therapy in home care settings and provide training to patient caregivers at home, considering that close family members can act as therapy providers to alleviate constipation. This therapy can also be performed daily to maximize its effectiveness in relieving constipation.

Acknowledgment

The author would like to thank ITEKES Bali for their support and assistance with this study.

Conflict of Interest

The author declare that there are no conflicts of interest related to this study.

REFERENCES

1. World Health Organizatioan (WHO). Global status report on non communicable diseases 2014. London; 2014.
2. Riskesdas. Laporan Riskesdas 2018 Provinsi Sulawesi Tenggara [Internet]. 2018. Tersedia pada: http://repository.litbang.kemkes.go.id/3899/1/Riskesdas Sulawesi Tenggara 2018.pdf
3. J, Li; M Yuan, Y Liy, Zhao Y, J Wang WG. Incidence of constipation in stroke patients: A systematic review and meta-analysis. Medicine (Baltimore). 2017;96(25).
4. Emly M, Marriott A. Revisiting constipation management in the community. 2017;22(4):2016–8.
5. Freitas C, Sousa C, Maria O, Simões F, Fernandes DO, Miguel J, et al. Nonpharmacological Clinical Effective Interventions in Constipation : A Systematic Review. 2020;1–9.
6. C, Lin; j, Hung, C, Cho; C. Tseng, H Cehn F lIn & CL. Poststroke constipation in the rehabilitation ward: incidence , clinical course and associated factors. Pubmed. 2013;54 (11):624–9.
7. Windahandayani VY. GAMBARAN KONSTIPASI PADA PASIEN STROKE. 2021;2015–20.
8. Lämås K, Lindholm L, Stenlund H, Engström B, Jacobsson C. Effects of abdominal massage in management of constipation-A randomized controlled trial. Int J Nurs Stud. 2009;46(6):759–67.
9. Novitasari, Cika; Husain, Fida; p IKa Yohana; Sulistyo E. Swedish Abdominal Massage Sebagaia Terapi Komplementer Untuk Menjaga Pola Eliminasi Defekasi di ICU RSUD Sukoharjo : Swedish Abdominal Massage Sebagaia Terapi Komplementer Untuk Menjaga Pola Eliminasi Defekasi di ICU RSUD Sukoharjo. J Keperawatan Duta Med. 2023;3:60–6.
10. Sianturi, Nonika Roma Suryani; Tanjung, Dudut; Ritarwan K. EFEKTIVITAS MASASE ABDOMEN

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

Jurnal Keperawatan Komprehensif
Volume 11 Issue 1 January 2025

TERHADAP PENCEGAHAN KONSTIPASI PADA PASIEN STROKE. J Telenursing. 2022;4:237–42.

11. Fekri Z, Aghebati N, Sadeghi T. Complementary Therapies in Medicine The effects of abdominal " I LOV U " massage along with lifestyle training on constipation and distension in the elderly with stroke. Complement Ther Med [Internet]. 2021;57(February 2020):102665. Tersedia pada: https://doi.org/10.1016/j.ctim.2021.102665
12. Goldstein S, Casanelia L. the techniques of Swedish massage. Found Massage. 2009;163.
13. McClurg D, Harris F, Goodman K, Doran S, Hagen S, Treweek S, et al. Abdominal massage plus advice, compared with advice only, for neurogenic bowel dysfunction in MS: A RCT. Health Technol Assess (Rockv). 2018;22(58):1–133. DOI:10.1093/ageing/afw005
14. Mohamed WA, Ali JS, Gamal JA. Effect of abdominal massage technique on constipation for post stroke patients : As a preventive measure Effect of abdominal massage technique on constipation for post stroke patients : As a preventive measure. 2023;(March). **DOI:** https://doi.org/10.33545/surgicalnursing.**2023**.v5.i1b.12315.

Quanquan Ding, PhD, Shiwei Liu, PhD, Yindan Yao, PhD, Huina Liu, MS, Ting Cai, PhD, and Liyuan Han P. Global, Regional, and National Burden of Ischemic Stroke, 1990–2019. Neurology [Internet]. 2022;98:279–90. Tersedia pada: https://doi.org/10.1212/WNL.0000000000013115%0A%0A

16. Sekerci YG. The Relationship of Constipation and Abdominal Massage : Current Literature Data. 2020;17(1):620–8.
17. Osama A, Ashour Y, El-Razek RA, Mostafa I. Public knowledge of warning signs and risk factors of cerebro-vascular stroke in ismailia governorate, egypt. Egypt J Neurol Psychiatry Neurosurg. 2019;55(1):1–6.
18. Tang Y, Shi K, He F, Li M, Wen Y, Wang X, et al. Short and long-term efficacy of massage for functional constipation. Medicine (Baltimore). 2020;99(25):e20698. DOI: 10.1097/MD.0000000000020698.
19. Michael Camilleri, Alexander C. Ford, Gary M. Mawe, Phil G. Dinning, Satish Sanku Chander Rao, William D. Chey, Magnus Simrén, Anthony Lembo, Tonia M. Young-Fadok LC. Chronic constipation. Gastroenterology [Internet]. 2017;3. Tersedia pada: https://doi.org/10.1038/nrdp.2017.95
20. Aydinli A, Karadağ S. Effects of abdominal massage applied with ginger and lavender oil for elderly with constipation: A randomized controlled trial. Explore. 2023 Jan 1;19(1):115-20. https://doi.org/10.1016/j.explore.2022.08.010