Research Article

The Relationship Between Lifestyle with Chronic Pain and Pain Acceptance in Elderly with Stroke

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Abstract

Background: Changing lifestyle can be effective in preventing pain and facilitates the process of chronic pain and its side effects. Pain acceptance is an important and valuable concept related to the manner of a person, reaction, and compatibility with chronic pain.

Objectives: The current study was conducted to determine lifestyle with chronic pain and pain acceptance in patients with stroke in Ilam city in 2018.

Methods: This was a descriptive cross-sectional study conducted in 2018 on 200 patients, who were hospitalized at Shaheed Mostafa Hospital of Ilam city due to stroke. According to the goals of the study, demographic specifications, the questionnaire of lifestyle with chronic pain, and the questionnaire of chronic pain acceptance were used. The obtained data of this study were analyzed using descriptive statistics (mean, standard deviation, and the table of frequency distribution) and inferential statistical tests (independent t and analysis of variance (ANOVA)).

Results: According to the findings, the mean (SD) of pain acceptance was 16.22 (1.99) and that of lifestyle with chronic pain was 21.83 (3.91). Also, the maximum score in lifestyle with chronic pain and chronic pain acceptance was respectively 32 and 22. Also, there was no significant relationship between lifestyle and chronic pain and pain acceptance in elderly with stroke (P = 0.22).

Conclusions: According to the findings, mean (SD) scores of lifestyle with chronic pain and the rate of pain acceptance were not desired, therefore, nurses need to make improvements through nursing interventions.

Keywords: Chronic Pain, Stroke, Pain Acceptance

1. Background

Stroke is an important disease, which has many negative effects on health (1). Stroke is a sudden and local neurological defect, arising from ischemic lesions in the brain, and leads to change in the function of the brain that changes the performance of a part of the body and physical perception of body position (2). This disease is common in elderly and due to the growing elderly population, this group of patients need receive greater attention (3). Stroke is followed by different complications, such as reduced physical activity (4), reduced life quality (5), and increasing pain (6). Pain is one of the most important problems in elderly and patients with stroke, which causes a lot of problems for this group of people (7-9).

Pain is one of the pivotal issues in elderly as well as stroke patients (10-12). Patients with stroke experience different types of pain, including headaches, shoulder pain, and central post-stroke pins (13). Hemiplegic pain is one of the types of pain in patients with stroke, with an estimated prevalence of 16% to 84% (7,14,15). Also, in the study by Mazzocato et al. 69% of patients had pain (16), and in a review article by de Vries et al. it was shown that between 87.3% and 87.8% of patients experienced pain, indicating the importance of pain in these patients (17).

Pain acceptance is a crucial and valuable concept related to the manner of a person, reaction and compatibility with chronic pain (18). The findings of conducted studies have shown that pain acceptance is associated with better performance, less discomfort, and more pain treatment (18-21). In fact, instead of ineffective measures to reduce pain, the person concentrates on valuable activities and his appropriate personal goals so he is expected to have a better physical and mental performance (19, 22, 23), which indicates the necessity of pain acceptance (23).

Moreover, lifestyle can affect chronic pain. In fact,

changing lifestyle is effective on preventing pain and facilitates the process of chronic pain and its side effects (24). For example, effective factors on lifestyle, such as physical activity, sleeping, tobaccos, nutrition etc. affect pain management (24). Lifestyle with chronic pain involves a set of methods, used by a person in his daily life, allowing active compatibility with pain and elimination of problems (25).

The current study was conducted to determine lifestyle with chronic pain and pain acceptance in patients with stroke in Ilam city.

2. Methods

This was a cross-sectional study, conducted in 2018 on 200 patients, who had been hospitalized at Shaheed Mostafa Hospital of Ilam city due to stroke. According to previous studies, 200 stroke patients, older than 65, having the experience of being hospitalized and complete consciousness, were included in the study through simple random sampling.

The researcher prepared a list of stroke patients based on diagnosis of the physician in the clinical records of patients, and if six months had passed since their stroke and discharge from the hospital, they were called and asked to complete questionnaires through interviews. Thus, patients referred to the hospital or doctor's office and were enrolled in the study. In case of illnesses other than stroke, the cases were excluded from the study. After explaining the goals of study for the patients, they were informed that participation in the study was optional, had no cost, and they could leave the study at any time and the principles of confidentiality was emphasized. It is worth noting that the study was started after the confirmation of moral committee in research and obtaining permission of research from concerned authorities.

According to the goals of the study, the intended tools, including the demographic specifications (such as age, gender, income, education, and marital status), the questionnaire of living with chronic pain and the questionnaire of chronic pain acceptance were used (25-28). The questionnaire of lifestyle with chronic pain in elderly has 15 questions and investigates two areas of personal lifestyle (eight questions) and lifestyle (seven questions). The statements of the above-mentioned tools were designed in five-degree reverse Likert scale as always (zero), often (one score), sometimes (two scores), rarely (three scores), and never (four scores) and the obtained score was within 0 to 60. A higher score represented more appropriate lifestyle with chronic pain. This questionnaire was valid in terms of face, content, and construct and its reliability was determined through internal consistency of a = 0.85 and stability through retesting using intra-clustering correlation coefficient of 0.85 (25, 26).

The questionnaire of chronic pain acceptance in elderly has seven questions in two areas of pain (two questions) and the effort for reducing it (five questions). The statements of the above-mentioned tools are designed in five-degree Likert scale as always (four scores), often (three scores), sometimes (two scores), rarely (one score) and never (0 score) and the obtained score is within 0 to 28 and obtaining a higher score indicates the appropriateness of chronic pain acceptance in elderly. This questionnaire has face, content, and construct validity and its reliability has been determined through internal consistency of a = 0.83 and stability through retesting using intra-clustering correlation coefficient as 0.85 (27, 28).

The obtained data of this study was analyzed using SPSS16 statistical software, descriptive statistics (mean, standard deviation and the table of frequency distribution), and inferential tests (independent t and ANOVA).

3. Results

Table 1 shows mean (SD) of lifestyle and chronic pain acceptance based on patients' demographic specifications. The mean ± SD age of the patients was 78.93 (9.75). According to the findings of this table, there was a significant statistical relationship between lifestyle and chronic pain, gender, education (P = 0.000), and the average score of female patients as well as the education of higher than diploma. Moreover, there was no significant statistical relationship between pain acceptance and none of the demographic specifications (P > 0.05). Also, no significant relationship was found between lifestyle and chronic pain and pain acceptance in elderly with stroke (P = 0.22).

Table 2 indicates the status of frequency of lifestyle with chronic pain. According to the findings of this table, 69% of patients stated that pain is associated with reduced physical, spiritual, and social abilities and 55% of these patients said that they did not enjoy their life because of pain.

Table 3 shows the frequency distribution of chronic pain acceptance. According to the findings, a few patients were in the field of pain so that 9.5% of patients stated that they were aware of the type of disease and pain and only 1.5% of patients were able to control their pain.

According to the findings of Table 4, the mean (SD) of pain acceptance was 16.22 (1.99) and lifestyle with chronic pain was 21.83 (3.91). Also, the maximum score in lifestyle with chronic pain and chronic pain acceptance was respectively 32 and 22.

4. Discussion

According to the findings of the current study, the mean of chronic pain acceptance and lifestyle with chronic pain in the current study was higher than the mean of chronic pain acceptance and lifestyle with chronic pain in

Table 1. Lifestyle with Chronic Pain Acceptance Based on Patients' Demographic Specifications

Demographic Variables	No. (%)	Life Style Pain[a]	Chronic Pain Acceptance[a]
Gender			
Man	105 (52.5)	20.82 ± 3.90	16.15 ± 2.03
Female	95 (47.5)	22.93 ± 3.63	16.30 ± 2.01
P value	-	0.000	0.59
Education level			
Diploma and under the diploma	142 (71)	20.76 ± 3.73	16.36 ± 1.94
Top diploma	58 (29)	24.44 ± 3.02	15.87 ± 2.10
P value	-	0.000	0.11
Income			
Weak	135 (67.5)	21.77 ± 4.24	16.32 ± 2.10
Medium	58 (29)	22.20 ± 3.01	15.96 ± 1.82
Good	7 (3.5)	19.85 ± 3.53	16.42 ± 0.78
P value	-	0.50	0.31
Marital status			
Has spouse	98 (49)	21.31 ± 3.81	16.24 ± 2.00
No spouse	102 (51)	22.32 ± 3.95	16.20 ± 2.01
P value	-	0.06	0.89

[a] Values are expressed as mean ± SD.

Table 2. Frequency Distribution of Questions of Lifestyle with Chronic Pain Questionnaire in the Study Patients[a]

Due to the Pain, I Have the Following Problems:	Never	Rarely	Sometimes	Rarely	Often
1. My abilities (physical, mental, social and spiritual) are decreased.	138 (69)	31 (15.5)	10 (5)	11 (5.5)	10 (5)
2. I have become inactive.	108 (54)	35 (17.5)	25 (12.5)	23 (11.5)	9 (4.5)
3. I depend on different things (lift, chair, car, etc.) to do my personal works.	81 (40.5)	62 (31)	38 (19)	13 (6.5)	6 (3)
4. I depend on others for doing my works (personal hygiene, leaving home, etc.).	45 (22.5)	40 (20)	30 (15)	74 (37)	11 (5.5)
5. To reduce my pain, I have to take multiple medications.	79 (39.5)	61 (30.5)	31 (15.5)	16 (8)	13 (6.5)
6. I have referred to various treatment centers (hospitals, offices, etc.).	48 (24)	66 (33)	59 (29.5)	17 (8.5)	10 (5)
7. My family and my relatives are worried.	45 (22.5)	30 (15)	71 (35.5)	42 (21)	12 (6)
8. I wish for death.	2 (1)	3 (1.5)	24 (12)	73 (36.5)	98 (49)
9. I do not listen to others' advice.	85 (42.5)	44 (22)	29 (14.5)	29 (14.5)	13 (6.5)
10. I do not enjoy my life.	110 (55)	64 (32)	18 (9)	7 (3.5)	1 (0.5)
11. I cannot help other family members.	97 (48.5)	53 (26.5)	39 (19.5)	10 (5)	1 (0.5)
12. The person who takes care of me has got problems (losing the opportunity of marriage, job, etc.).	2 (1)	18 (9)	59 (29.5)	74 (37)	47 (23.5)
13. I feel lonely.	91 (45.5)	61 (30.5)	39 (19.5)	8 (4)	1 (0.5)
14. I'm having problems with my job (pre-retirement, job loss, etc.).	7 (3.5)	11 (5.5)	48 (24)	84 (42)	50 (25)
15. I'm having financial problems.	96 (48)	44 (22)	49 (24.5)	10 (5)	1 (0.5)

[a] Values are expressed as No. (%).

the study of Shirazi et al. (25) on elderly group. This difference may be because of differences in the method of sampling and features of study population so that the elderly with stroke were investigated in this study through simple random sampling while in the study of Shirazi et al. (25), the elderly with chronic pain, referring to health centers

Table 3. The Frequency Distribution of the Questions of Chronic Pain Acceptance Questionnaire in the Study Patients[a]

Variable	Rarely	Sometimes	Mostly	Always
1. I know the type of my disease and pain.	18 (9)	112 (56)	51 (25.5)	19 (9.5)
2. My pain can be reduced.	72 (36)	99 (49.5)	26 (13)	3 (1.5)
3. I avoid doing things and conditions that exacerbate my pain.	25 (12.5)	75 (37.5)	84 (42)	16 (8)
4. I use my abilities to cope with pain.	22 (11)	73 (36.5)	89 (44.5)	16 (8)
5. I prevent my pain to emerge.	20 (10)	96 (48)	60 (30)	24 (12)
6. I've been able to reduce my pain.	50 (25)	94 (47)	44 (22)	12 (6)
7. I am following the recommended care measures.	20 (10)	76 (38)	70 (35)	34 (17)

[a] Values are expressed as No. (%).

Table 4. The Mean (SD) of Lifestyle and Chronic Pain Acceptance

Variable	Mean ± SD	Score	
		Min	Max
Pattern of life with chronic pain	21.83 ± 3.91	12	32
Acceptance of pain	16.22 ± 1.99	11	22

were selected through cluster sampling.

According to the findings, there was no significant relationship between lifestyle and chronic pain and the status of pain acceptance, which is not consistent with the results of Shirazi et al. (25). The findings also showed that most patients had become inactive because of pain, which is consistent with the results of the study by Lazaridou et al. on patients with knee osteoarthritis, in which there was a significant statistical relationship between physical activity and pain (29). Also, in the study of Parker et al. on patients with chronic pain, the findings showed that pain is effective on the rate of physical activity (30), which is consistent with the results of the current study.

The findings of the current study showed that patients had become dependent in their personal activities because of pain. The findings of a study by Yiengprugsawan and Stepto on an elderly group showed that there was a relationship between activities of daily living and pain (31). Also, in the study of Yiengprugsawan et al. aimed at determining the relationship between daily living and lower back pain, the findings showed that pain affects the rate of daily living (32). According to their findings, most patients stated pain as a reason for referring to hospitals, which is consistent with the results of the study by Kiani and Shahsavani, who showed that patients referred to hospitals in case of pain (33).

Based on the results of this study, there was a significant relationship between the rate of pain and life pleasure and elderly patients mentioned pain as a barrier for enjoying life. In the study of Karadag Arli et al. on an elderly group, they showed that there is a significant relationship between pain and life satisfaction and the elderly

with pain were more dissatisfied with life (34). Also, in the study of Budh and Osteraker on groups with spinal cord injury (SCI), it was shown that the rate of life satisfaction was more in SCI patients with lower back pain than those with upper back pain (35), which is consistent with the results of the current study, based on better life pleasure for patients with lower back pain.

4.1. Conclusions

According to the findings, Mean (SD) of scores of lifestyle with chronic pain and the rate of pain acceptance were not desired, therefore, the nurses need to make improvements through nursing interventions.

Acknowledgments

References

1. Koton S, Schneider AL, Rosamond WD, Shahar E, Sang Y, Gottesman RF, et al. Stroke incidence and mortality trends in US communities, 1987 to 2011. *JAMA*. 2014;**312**(3):259–68. doi: 10.1001/jama.2014.7692. [PubMed: 25027141].

2. Gholami B. [Survey the effect of core stabilization trainings on the static and dynamic balance of stroke patients]. *Sci J Ilam Univ Med Sci*. 2015;**23**(4):248–56. Persian.

3. Leslie-Mazwi TM, Chandra RV, Simonsen CZ, Yoo AJ. Elderly patients and intra-arterial stroke therapy. *Expert Rev Cardiovasc Ther*. 2013;**11**(12):1713–23. doi: 10.1586/14779072.2013.839219. [PubMed: 24195443].

4. Aguiar LT, Nadeau S, Britto RR, Teixeira-Salmela LF, Martins JC, Faria C. Effects of aerobic training on physical activity in people with stroke: Protocol for a randomized controlled trial. *Trials*. 2018;**19**(1):446. doi: 10.1186/s13063-018-2823-0. [PubMed: 30119697]. [PubMed Central: PMC6098648].

5. Pedersen SG, Heiberg GA, Nielsen JF, Friborg O, Stabel HH, Anke A, et al. Validity, reliability and Norwegian adaptation of the stroke-specific quality of life (SS-QOL) scale. *SAGE Open Med*. 2018;**6**:2.050312117752E+15. doi: 10.1177/2050312117752031. [PubMed: 29344360]. [PubMed Central: PMC5764138].

6. Lindgren I, Gard G, Brogardh C. Shoulder pain after stroke - experiences, consequences in daily life and effects of interventions: A qualitative study. *Disabil Rehabil*. 2018;**40**(10):1176–82. doi: 10.1080/09638288.2017.1290699. [PubMed: 28637154].

7. Pan R, Zhou M, Cai H, Guo Y, Zhan L, Li M, et al. A randomized controlled trial of a modified wheelchair arm-support to reduce shoulder pain in stroke patients. *Clin Rehabil*. 2018;**32**(1):37–47. doi: 10.1177/0269215517714830. [PubMed: 28629270]. [PubMed Central: PMC5751850].

8. Chau JPC, Lo SHS, Yu X, Choi KC, Lau AYL, Wu JCY, et al. Effects of acupuncture on the recovery outcomes of stroke survivors with shoulder pain: A systematic review. *Front Neurol*. 2018;**9**:30. doi: 10.3389/fneur.2018.00030. [PubMed: 29445354]. [PubMed Central: PMC5797784].

9. Yu T, Ma J, Jiang Y, Li J, Gen Y, Wen Y, et al. Assessing pain among chinese elderly-Chinese health and retirement longitudinal study. *Iran J Public Health*. 2018;**47**(4):553–60. [PubMed: 29900140]. [PubMed Central: PMC5996333].

10. Harrison RA, Field TS. Post stroke pain: Identification, assessment, and therapy. *Cerebrovasc Dis*. 2015;**39**(3-4):190–201. doi: 10.1159/000375397. [PubMed: 25766121].

11. Schuler M, Becker A, Lindena G, Mattenklodt P. [Treatment of elderly with chronic pain in geriatric care and pain therapy facilities in Germany. Survey results]. *Schmerz*. 2015;**29**(4):422–30. German. doi: 10.1007/s00482-015-0035-z. [PubMed: 26267819].

12. Manoochehri H, Shirazi M, Zagheri Tafreshi M, Zayeri F. Chronic pain management and being vulnerable in older people: A qualitative study. *Jundishapur J Chron Dis Care*. 2014;**3**(4).

13. Mulla SM, Wang L, Khokhar R, Izhar Z, Agarwal A, Couban R, et al. Management of central poststroke pain: Systematic review of randomized controlled trials. *Stroke*. 2015;**46**(10):2853–60. doi: 10.1161/STROKEAHA.115.010259. [PubMed: 26359361].

14. Poduri KR. Shoulder pain in stroke patients and its effects on rehabilitation. *J Stroke Cerebrovasc Dis*. 1993;**3**(4):261–6. doi: 10.1016/S1052-3057(10)80071-0. [PubMed: 26487463].

15. Adey-Wakeling Z, Arima H, Crotty M, Leyden J, Kleinig T, Anderson CS, et al. Incidence and associations of hemiplegic shoulder pain poststroke: Prospective population-based study. *Arch Phys Med Rehabil*. 2015;**96**(2):241–247 e1. doi: 10.1016/j.apmr.2014.09.007. [PubMed: 25264111].

16. Mazzocato C, Michel-Nemitz J, Anwar D, Michel P. The last days of dying stroke patients referred to a palliative care consult team in an acute hospital. *Eur J Neurol*. 2010;**17**(1):73–7. doi: 10.1111/j.1468-1331.2009.02744.x. [PubMed: 19614968].

17. de Vries NJ, Sloot PH, Achterberg WP. Pain and pain assessment in stroke patients with aphasia: A systematic review. *Aphasiology*. 2016;**31**(6):703–19. doi: 10.1080/02687038.2016.1254150.

18. McCracken LM, Eccleston C. Coping or acceptance: What to do about chronic pain? *Pain*. 2003;**105**(1-2):197–204. [PubMed: 14499436].

19. McCracken LM, Eccleston C. A prospective study of acceptance of pain and patient functioning with chronic pain. *Pain*. 2005;**118**(1-2):164–9. doi: 10.1016/j.pain.2005.08.015. [PubMed: 16203093].

20. Nicholas MK, Asghari A. Investigating acceptance in adjustment to chronic pain: Is acceptance broader than we thought? *Pain*. 2006;**124**(3):269–79. doi: 10.1016/j.pain.2006.04.032. [PubMed: 16934925].

21. Vowles KE, McCracken LM. Acceptance and values-based action in chronic pain: A study of treatment effectiveness and process. *J Consult Clin Psychol*. 2008;**76**(3):397–407. doi: 10.1037/0022-006X.76.3.397. [PubMed: 18540733].

22. McCracken LM, Vowles KE, Eccleston C. Acceptance of chronic pain: Component analysis and a revised assessment method. *Pain*. 2004;**107**(1-2):159–66. doi: 10.1016/j.pain.2003.10.012. [PubMed: 14715402].

23. McCracken LM, Vowles KE, Eccleston C. Acceptance-based treatment for persons with complex, long standing chronic pain: A preliminary analysis of treatment outcome in comparison to a waiting phase. *Behav Res Ther*. 2005;**43**(10):1335–46. doi: 10.1016/j.brat.2004.10.003. [PubMed: 16086984].

24. van Hecke O, Torrance N, Smith BH. Chronic pain epidemiology - where do lifestyle factors fit in? *Br J Pain*. 2013;**7**(4):209–17. doi: 10.1177/2049463713493264. [PubMed: 26516524]. [PubMed Central: PMC4590163].

25. Shirazi M, Manoochehri H, Zagheri TM, Zayeri F, Alipour V. [The association of chronic pain acceptance, life style and restriction related chronic pain in elderlies]. *Sci J Hamadan Nurs Midwifery Facult*. 2016;**24**(3):148–58. Persian.

26. Shirazi M, Manoochehri H, Zayeri F. [Development and psychometric analysis of a questionnaire to assess living with chronic pain in older adults]. *Quart Nurs Vulnerables*. 2015;**2**(4):15–36. Persian.

27. Shirazi M, Manoochehri H, Zagheri Tafreshi M, Zayeri F. [Development and psychometric evaluation of chronic pain acceptance instrument in the elderly]. *Anesthesiol Pain*. 2015;**5**(2):33–47. Persian.

28. Shirazi M, Manoochehri H, Zagheri Tafreshi M, Zayeri F, Alipour V. [Testing of comprehensive chronic pain management model in older people]. *Anesthesiol Pain*. 2017;**7**(2):49–62. Persian.

29. Lazaridou A, Martel MO, Cornelius M, Franceschelli O, Campbell C, Smith M, et al. The association between daily physical activity and pain among patients with knee osteoarthritis: The moderating role of pain catastrophizing. *Pain Med*. 2018. doi: 10.1093/pm/pny129. [PubMed: 30016486].

30. Parker R, Bergman E, Mntambo A, Stubbs S, Wills M. Levels of physical activity in people with chronic pain. *S Afr J Physiother*. 2017;**73**(1):323. doi: 10.4102/sajp.v73i1.323. [PubMed: 30135895]. [PubMed Central: PMC6093138].

31. Yiengprugsawan V, Steptoe A. Impacts of persistent general and site-specific pain on activities of daily living and physical performance: A prospective analysis of the English Longitudinal Study of Ageing. *Geriatr Gerontol Int*. 2018;**18**(7):1051–7. doi: 10.1111/ggi.13304. [PubMed: 29573116].

32. Yiengprugsawan V, Hoy D, Buchbinder R, Bain C, Seubsman SA, Sleigh AC. Low back pain and limitations of daily living in Asia: Longitudinal findings in the Thai cohort study. *BMC Musculoskelet Disord*. 2017;**18**(1):19. doi: 10.1186/s12891-016-1380-5. [PubMed: 28103864]. [PubMed Central: PMC5244554].

33. Kiani F, Shahsavani A. [The study of the relationship between pain onset time interval and referring of patients with MI to Khatami Al Anbia hospital of Zahedan, Iran (2014-2015)]. *Biomed Res*. 2017;**28**(1). Persian.

34. Karadag Arli S, Bakan AB, Varol E, Aslan G. Investigation of pain and life satisfaction in older adults. *Geriatr Gerontol Int*. 2018;**18**(1):5–11. doi: 10.1111/ggi.13125. [PubMed: 28753242].

35. Budh CN, Osteraker AL. Life satisfaction in individuals with a spinal cord injury and pain. *Clin Rehabil*. 2007;**21**(1):89–96. doi: 10.1177/0269215506070313. [PubMed: 17213246].