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RESEARCH ARTICLE

EFFECT OF FOOT REFLEXOLOGY ON THE LEVEL OF DEPRESSION AMONG OLDER ADULTS RESIDING AT OLD AGE HOME IN WEST BENGAL

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ABSTRACT

Aim: To assess the effectiveness of foot reflexology on the level of depression among older adults residing at selected old age home, West Bengal. **Background:** Older people are a valuable resource for any society. When a person gets old, he inevitably needs more care and affection. Ageing is a natural phenomenon with opportunities and challenges faced more when they are residing at old age home. It is estimated that approximately 4 million older people have suffered moderate to severe mental health problems mainly depression. It has been reported that reflexology helps to improve physical as well as psychological well-being in older adults. **Method:** The data was collected from 100 older adults residing at old age home. Foot reflexology is the intervention given to the group for 30 minutes for 5 times a week for consecutive 4 weeks (first 1 week by the physiotherapist and remaining 3 weeks by the researcher). Pre-test and post-test was done using Geriatric Depression Scale before and on the 30th day of intervention respectively. **Result:** The findings revealed that before the intervention, majority of the older adults had moderate level of depression whereas after the intervention (foot reflexology) most of the older adults had mild level of depression. This shows that foot reflexology was effective in reducing the level of depression among older adults at $p < 0.001$ level of significance. **Conclusion:** Hence foot reflexology is effective in reducing the level of depression among older adults.

INTRODUCTION

Globally, the population is ageing rapidly. Between 2015 and 2050, the proportion of the world's population over 60 years will nearly double, from 12% to 22%. In absolute terms, this is an expected increase from 900 million to 2 billion people over the age of 60. (1) According to the report of the Technical Group on Population Projections for India and States 2011-2036, there are nearly 138 million elderly persons in India in 2021 (67 million males and 71 million females) and is further expected to increase by around 56 million elderly persons in 2031. (2) It has been estimated that of persons over 65 years, approximately 4 million have suffered moderate to severe mental health problems associated with aging process. Moreover, the most common mental disorder of old age is depressive disorder. (3,4) Depression is a mood disorder characterised by feelings of sadness, loss of interest or pleasure in nearly all activities, feelings of hopelessness and suicidal thoughts or self-blame. It is a manageable condition, the symptoms of which can often be improved or resolved through medication and/or non-medication related interventions. It is therefore important that depression affecting people in residential aged care is recognised and treated. Recognising depression in older people is often difficult and it is commonly under-diagnosed and under-treated in both residential care and in the community (5).

Foot reflexology is non pharmacological complementary therapy involving the application of pressure to specific points of the foot. The pressure applied in the reflexology massage intervention breaks down calcium crystals and uric acid in nerve pathways and causes psychological responses. Reflexology is aimed at promoting health in body organs and releasing stress from the body (6). Therefore, the purposes of this study were to assess the effectiveness of foot reflexology on the level of depression among older adults residing at old age home and to examine an associations of depression with selected demographic variables. The findings of this study prove foot reflexology to be an effective intervention in reducing depression among older adults and it will help nurses, other health care providers, and policy makers to use this therapy in reducing the severity of depression among older people admitted in hospitals and those residing at old age home and community.

Background: Entry into old age home can be challenging due to highly institutionalized, depersonalized, and bureaucratic atmosphere in old age home. Elderly living in such homes face problems of adjustment with tight and rigid schedules, separation from the family, isolation from the social milieu, anxiety over adopting oneself to a new environment and close encounters with death and ailment in the institutions. All above factors make the older adults vulnerable to psychological problems (7,8).

The prevalence of depression among older adults was nearly 29% (men:26% and women:31%) (9). A study was done to compare the level of depression between older adults residing at an old age home and older adults living with their families in an urban community of Kolkata, West Bengal. Findings revealed that majority of the older adults residing in an old age home experienced severe depression whereas majority of older adults living with family experienced mild depression. Older adults residing at an old age home had severe depression four times more than older adults living with family. Statistically significant relationship was found between age and level of depression of older adults residing at an old age home and older adults living with family. (10). According to Ancient Chinese philosophy, energy flow can be blocked and cause diseases like depression for which reflexology was used as a form of complementary and alternative medicine.(11) Foot reflexology is based on the principle that certain areas on the feet have specific reflex points and correspond with other body organs.(12) By stroking, massaging, and applying pressure to such points, therapy can unblock energy flow and release tension which can help the body heal itself (11).

Many studies revealed that foot reflexology could reduce pain and psychological distress like depression, stress, and anxiety. One group pre-post test design study was conducted to identify the effects of self foot reflexology on depression, sleep, and low back pain in elderly women aged 65 years and over. After two weeks of reflexology education, the women did foot reflexology themselves for approximately 40 minutes, five times a week for four weeks. The scores for depression, sleep, and low back pain were measured at baseline, and after 4 weeks of self-treatment. A significant differences were found in depression, sleep, and low back pain between baseline, after 4 weeks of self-treatment indicating lower depression level, better sleep and less pain reported after the intervention (13). Another study examined the effects of foot reflexion massage on sleep disturbance, depression disorder, and physiological index of the elderly in nursing homes. The subjects were 50 elderly people (experimental group n=25; control group=25) who resided in two different nursing homes in the same region. Foot reflexion massage was provided for 12 sessions, 30 minutes per session to the experimental group. Sleep disturbance, depression disorder, and physiological indices (blood plasma serotonin, serum cortisol) were all measured before and after foot reflexion massage for both the groups. The findings revealed that the experimental group had improved sleep quality, less depression disorder, and had higher serotonin levels than the control group (14). A comparative study was done to assess the effects of reflexology and relaxation on the psychological symptoms (anxiety, stress and depression) in women with multiple sclerosis. Seventy-five women with MS were randomly assigned by minimization method to three groups: reflexology, relaxation and control (25 patients in each group). Reflexology and relaxation groups received respective interventions twice a week for 40 min for 4 weeks by the researcher. The control group received only routine treatment as directed by a doctor. Depression anxiety and stress scale questionnaire were completed by all three groups, before, immediately after and 2 months after interventions. all three groups. The results showed a significant reduction in the severity of anxiety, stress, and depression during the different times in the reflexology and relaxation groups as compared with the control group (15).

An experimental study was performed to identify the effects of self-foot reflexology massage on depression, stress responses and functions of the immune system of middle-aged women (40 - 64 years). In this study subjects were trained in self foot reflexology massage only for 2 weeks, and then they did their own daily massage for 6weeks (2 days at the research center, 5 days at home). The outcome variables were measured 4 times, at baseline, pre training, after training, and after the intervention. The findings revealed that there was a statistically significant difference in depression, perceived stress, systolic blood pressure, natural-killer cells, and Ig G; suggesting that a self-foot reflexology massage could be utilized as an effective nursing intervention to reduce depression and stress

responses, and to strengthen immune systems in middle-aged women (16). A quasi-experimental study was done to assess the effectiveness of foot reflexology on anxiety level among primigravid mothers. Thirty samples were selected by purposive sampling technique. Foot reflexology was administered only to the experimental group for one week for 20 minutes duration by the researcher. Pre-test and post-test were conducted for both the control and experimental group using modified Zung Self-Rating scale before and on the seventh day of intervention respectively. In the experimental group, a majority (93.3%) of primigravid mothers had moderate anxiety and the remaining 6.67% of sample had severe anxiety before administering Foot Reflexology and after administering Foot-Reflexology 6.67% had moderate anxiety and 93.3% of them had mild anxiety. In the experimental group, the mean post-test score (38.87±6.31) was less than the mean pre-test score (53.27±6.75) (17). In summary reflexology seems to improve the physical aspects and emotional aspects of an individual. In two studies, subjects were trained to perform foot reflexology by themselves and in others studies foot reflexology was performed by the researcher. Reflexology is non-invasive procedure, cost effective and can be conducted in any settings.

Conceptual Framework: Conceptual framework for this study is derived from the General System Theory designed by Ludwig von Bertalanffy (1986) which deals with a general science of 'wholeness.' It emphasizes relationships between the whole and the parts and describes how parts function and behave. The peculiarity of open system is that they allow energy, matter, and information to move freely between systems and boundaries. The systems interaction has three components:-Input, Throughput and Output (18)

Input: It refers to what enters the system from outside. In this study, the input consists of demographic variables and level of depression which is assessed by Geriatric depression scale.

Throughput: This refers to the transformation of input into output by the system. In this study, the throughput is implementation of foot reflexology.

Output: Output refers to what leaves the system outside of themselves. In this study, output was categorized into two parts, reduction in the level of depression and no reduction in the level of depression.

METHODS

A quasi – experimental design (one-group pre-test- post-test design) was adopted for this study. The sample of this research study was 100 older adults residing at selected old age home drawn through purposive sampling technique. No probability convenient sampling technique was used to select the setting. The instrument used to assess the level of depression among the older adults was Geriatric depression scale (GDS) through structured interview schedule.(19)Foot reflexology is the intervention given to the group for 30 minutes for 5 times a week for consecutive 4 weeks (first 1 week by the physiotherapist and remaining 3 weeks by the researcher). Pre-test and post-test was done before and on the 30th day of intervention respectively.

Data Analysis:Data was organized, tabulated and interpreted using descriptive and inferential statistics. Independent t-test was used to compare the level of depression between older adults residing at old age home and older adults living with the family. Correlation-coefficient and chi- square tests of association examined the relationship and associations between selected variables.

RESULT

Description of sample characteristics: The data presented in table 1 shows that most of participants were between the ages 60 to 70 years (79%) and 71 to 80 years old (9%) and more than 80 years (12%).

Table 1. Frequency and percentage distribution of sample characteristics

Sample Characteristics	Frequency	Percentage%
n=100		
Age (in years)		
60-70	79	79
71-80	09	9
>80	12	12
Gender		
Male	38	38
Female	62	62
Religion		
Hindu	57	57
Muslim	24	24
Others	19	19
Education		
Illiterate	05	5
Primary	36	36
Secondary	46	46
Higher Secondary	06	6
Graduation and more	07	7
Marital Status		
Married	77	77
Unmarried	15	15
Divorced	08	8
Separated	Nil	Nil
Having Children		
Yes	81	81
No	19	19
Income		
Yes	21	21
No	79	79
Reason for joining old age home		
Poor economical condition	17	17
Family conflict	44	44
Others	39	39
Duration of stay in old age home		
<1 year	36	36
1-3 years	23	23
3-5 years	28	28
>5 years	13	13
Frequency of visit by family members		
Once in a week	15	15
Once in a month	27	27
Once in six months	19	19
Never	39	39
Presence of any medical illness		
Yes	24	24
No	76	76
Performing basic activities		
Yes	44	44
No	56	56
Recreation activities		
Yes	30	30
No	70	70

Sixty two percent of them were female and 38% were male. Majority of the participants were Hindus (57%), followed by Muslim (24%) and others (19%). Majority of them (77%) were married, (15%) unmarried and remaining (8%) were divorced. Most of the participants had secondary education (46%) followed by primary education (36%), graduation and more (7%), higher secondary education (6%) and no education (5%). Eighty one percent of the participant had children whereas 19% had no children. Majority of the participant (44%) joined old age home because of family conflict, 39% due to other reason and 17% due to poor economical condition. The duration of staying at old age home for 36% of the participant was less than one year, 28% was from three to five years, 23% was from one to three years and 13% was for more than five years. Majority of the participant (39%) had no visitors, 27% had visitors once a month, 19% had visitors once in six months and only 15% had visitors once a week. Seventy six percent of participants do not have any medical illness and 24% had medical illness. Majority of the participants (56%) did not perform basic activities whereas 44% performed basic activities. Most of the participant (70%) did not perform recreational activities and 30% performed recreational activities.

Comparison of pre-test and post-test level of depression among the older adults: Figure 1 shows that before the intervention, majority of the older adults (65%) had moderate level of depression, 25% had mild level of depression and 10% had severe level of depression whereas after most of the older adults (55%) had mild level of depression, 25% had moderate level of depression, 15% had normal level of depression and only 5% had severe depression. The data presented in table 2 shows that the mean and standard deviation of pre-test score of the participants residing at old age home were 9.30 and 2.04 respectively and the mean and standard deviation of post-test score of the participants were 7.33 and 2.79 respectively. The mean difference is 1.97.

Table 2. Mean, standard deviation and mean difference of the pre-test and post-test depression score

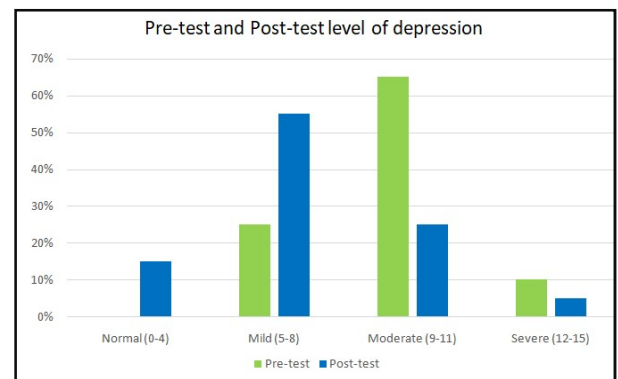
Test	Mean	Standard Deviation	Mean Difference
Pre-test	9.30	2.04	1.97
Post-test	7.33	2.79	

Effectiveness of foot reflexology on the level of depression among the older adults: The data in table 3 shows that pre-test mean score is 9.30 ± 2.04 and the post-test mean score is 7.33 ± 2.79 . The mean difference is 1.97. The calculated paired 't' test value 14.91 is highly significant than the table value 3.174. This shows that foot reflexology was effective in reducing the level of depression among older adults at $p < 0.001$ level of significance. Hence foot reflexology is effective in reducing the level of depression among older adults.

Table 3. Mean, standard deviation, mean difference and 't' value of the pre-test and post-test depression score

Test	Mean	Standard Deviation	Mean Difference	df	Paired 't' test
Pre-test	9.30	2.04	1.97	99	14.91***
Post-test	7.33	2.79			

df(99)=3.174, $p < 0.001$

**Figure 1. Bar diagram showing percentage distribution of pre-test and post-test level of depression score**

DISCUSSION

The present study shows that foot reflexology was effective in reducing the level of depression among older adults. The findings are consistent with the previous studies that found foot reflexology effective in reducing the level of depression among older adults. (13,14,15,16)

CONCLUSION

The study concluded that providing foot reflexology was effective in reducing the level of depression among older adults. Foot reflexology is a low cost and effective intervention which can be implemented by the health care providers in different health care settings.

The study can be replicated with a larger sample so that the findings can be generalized to a larger population. The study can be replicated in other states of India, both urban and rural areas.

Conflict of Interest: The authors declared no probable conflicts of interest with respect to the article, authorship and publication of the article.

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REFERENCES

- World Health Organization. Mental health of older adults. WHO. 2017 December 12; Available from: <http://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults>
- Vikaspedia. Senior Citizens- Status in India. India Development Gateway (InDG) initiative. Available from: <https://vikaspedia.in/social-welfare/senior-citizens-welfare/senior-citizens-status-in-india>
- Beekman AT, Deeg DJ, Vantilburg T, Smith JH, Hooijer C & Van Tilburg W. Major and minor depression in later life: A study of prevalence and risk factors. *J Affect Disord.* 1995; 36(1-2): 65-75.
- Reddy NB, Pallavi M, Reddy NN, Reddy CS, Singh RK & Pirabu RA. The psychological morbidity status among the rural geriatric population of Tamil Nadu, India: A cross-sectional study. *Indian J Psycho Med.* 2012; 34(3): 227-231.
- Australian Bureau of Statistics. Disability, Ageing and Carers, Australia: Summary of Findings (Internet). Canberra: ABS; 2018 (cited 2022 December 15). Available from: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4430.0>
- Bahrami T, Rejeh N, Karimooi M H, Tadrissi S D, Vaismoradi M. The effect of foot reflexology on hospital anxiety and depression in female older adults; A Randomized Controlled Trial. *International Journal of Therapeutic Massage and Bodywork.* 2019 September 3; 12.(3). Available from: <https://pdfs.semanticscholar.org/a77c/40d578d89b26e93d073cf13a1b94bb417ea8.pdf>
- Australian Institute of Health and Welfare 2013. Depression in residential aged care 2008–2012. Aged care statistics series no. 39. Cat. no. AGE 73. Canberra: AIHW.
- Akbar S, Tiwari SC, Tripathi RK, Pandey NM, Kumar A. Prevalence of Psychiatric Illness among Residents of Old Age Homes in Northern India. *J Neurosci Rural Pract.* 2018 Apr-Jun;9(2):193-196. doi: 10.4103/jnpr.jnpr_340_17. PMID: 29725168; PMCID: PMC5912023.
- Ansari S, Anand A, Hossain B (2022) Multimorbidity and depression among older adults in India: Mediating role of functional and behavioural health. *PLoS ONE* 17(6): e0269646. Available from: <https://doi.org/10.1371/journal.pone.0269646>
- Mahat A. The Level of Depression among Older Adults Residing at Old Age Home and with the Family in an Urban Community of India. *SM J Nurs.* 2018; 4(1): 1020.
- Smith K. How Reflexology can help with Depression. *Relax the feet.* 2017; Available from: <https://www.relaxthefeet.com/how-reflexology-can-help-with-depression>
- James K. Natural food series: 13 benefits of foot massage and reflexology. *General Health;* 2018. Available from: <https://www.naturalfoodseries.com/13-benefits-foot-massage-reflexology/>
- Mi-Ran E, Kim EK, Oh HY, Kim H, Kwak KH. The Effects of Self Foot Reflexology on Depression, Sleep and Low Back Pain in Community Dwelling Elderly Women. *Journal of Korean Academy of Fundamentals of Nursing.* 2018; 15. Available from: https://www.researchgate.net/publication/264020546_The_Effects_of_Self_Foot_Reflexology_on_Depression_Sleep_and_Low_Back_Pain_in_Community_Dwelling_Elderly_Women
- Song RH, Kim DH. The effects of foot reflexion massage on sleep disturbance, depression disorder, and the physiological index of the elderly. *J Korean Acad Nurs.* 2006; 36(1):15-24. Available from: <https://doi.org/10.4040/jkan.2006.36.1.15>
- Soheili M, Nazari F, Shaygannejad V, Valiani M. A comparison the effects of reflexology and relaxation on the psychological symptoms in women with multiple sclerosis. *J Edu Health Promot.* 2017; 6:11. doi: 10.4103/jehp.jehp_166_14
- Lee YM. Effect of self-foot reflexology massage on depression, stress responses and immune functions of middle aged women. *J Korean Acad Nurs.* 2006; 36(1):179-188. Available from: <https://doi.org/10.4040/jkan.2006.36.1.179>
- Nijina, K.V., & Vinish, V. (2017). Effectiveness of Foot Reflexology on anxiety among primigravid mothers in a selected rural area at Mangalore. *Manipal Journal of Nursing and Health Sciences,* 3(2), 32-37. Available from: https://ejournal.manipal.edu/mjnhs/docs/Volume%203_Issue%202/Full_text_articles_and_cover_page/7-Original%20nijina.pdf
- Taylor C, Lillis C, LeMone P, Lynn P. *Fundamentals of Nursing: The art and science of nursing care.* 6th ed. Lippincott Williams & Wilkins. New Delhi. 2009; vol-1, 84-85.
- Yesavage JA. Geriatric Depression Scale. Ageing Clinical Research Center. Stanford University School of Medicine. 2004. Available from: <https://web.stanford.edu/~yesavage/GDS.html>
