Original Research Article

Effect of Depressive Symptoms on Memory Impairment and General Health in the Geriatric Population

Rozell Periera[1]

[1]*Post Graduate Student, Department of Psychology, Smt. Maniben Nanavati Women's College, Mumbai.*
E-mail – rozellerica@gmail.com

ABSTRACT

Memory and general health among the geriatrics 58 years to 64 years (with depressive and without depressive symptoms) is evaluated. Hundred and twelve geriatrics (56 males and 56 females) were screened with a depression scale for severity and accordingly divided into two categories (with and without depressive symptoms). A memory scale and a general health scale were then administered on all the 112 geriatrics. Gender and memory differences were observed in geriatric with and without depressive symptoms ($p<0.05$). Differences in the general health of geriatrics with and without depressive symptoms was also observed ($p<0.05$), although gender differences in general health of geriatrics with and without depressive symptoms was not significant.

Keywords: *memory, general health and depressive symptoms.*

INTRODUCTION

Aging is not lost youth, but a new stage of opportunity and strength" Betty Friedan. According to Erik Erikson [1], old age is a time of integrity and not despair. Old age is also referred to as 'Senescence' i.e. the final stage of the normal life span in human beings. The United Nations agreed that old age is denoted for 60+ years. However, the World Health Organization (WHO) has set 50+ as the beginning of old age. Individuals of the age 60 and older are referred to as 'Elderly' or 'Geriatrics'. It is frequently defined as 60 or 65 years of age or older. The age of 60 or 65 years, roughly equivalent to retirement ages in most developed countries, is said to be the beginning of old age. A number of life events take a heavy toll on the person's well being. These life events can cause either chronic or other mental disorders. Older adults or elderly may also face a loss of control over their life due to hearing loss, failing eyesight as well as other physical changes, external pressures such as limited financial resources etc. These often give rise to negative emotions such as sadness, hopelessness, anxiety, loneliness and low self-esteem, which in turn leads to social withdrawal and apathy.

The term 'depression' is comes from the Latin word deprimere which meant to 'press down' to depressio to the English word depression. According to

the DSM-IV-TR, the annual incidence of major depression is 1.59% i.e. 1.89% in women and 1.10% in men. The mean age of onset is about 40 years [2]. Depression defers from simple grief or mourning, which are appropriate emotional responses to the loss of a loved one or object. A sad or grieving person can carry out normal day to day activities. However, for a person with depression his/her symptoms can interfere with his/ her ability to function normally for a long period of time in their life. Depression is considered if the depressed mood is disproportionately long or severe vis-à-vis the precipitating event.

Depression affects 1 in every 5 old people [3]. 15-20% of older adults in the United States experience depression [4]. Depressive symptoms are present in about 15% of all older adult community residents and nursing home patients. Age alone is not the only risk factor for the development of depression. Some of the reasons that are associated with the vulnerability of depression in old age are: being widowed, staying alone, lack of family support, unfavorable life events, and poor sources of income or having a chronic medical illness etc. The most common signs and symptoms of depressive disorders include lack of sleep, decreased appetite, weight loss, reduced energy and concentration and various other somatic complaints [2]. The most common symptoms of late life depression, according to the Geriatric Mental Health Foundation (2001), are never explained as a medical illness but are often explained in different ideas such as: "I'm too troubled, I don't feel well enough, or I don't have the energy to perform any activities". The most common symptoms are: persistent sadness, feeling slowed down, excessive worries about finances and health problems, frequent tearfulness, feeling worthless or helpless, weight changes, pacing changes, difficulty in sleeping, concentrating and physical symptoms such as pain or gastrointestinal problems.

Cognitive impairment in depressed geriatrics is also referred to as 'dementia syndrome of depression' or 'pseudodementia'. Geriatrics with pseudodementia are different from those with true dementia. Cognitive impairments can be experienced in different ways. Such as, attention- difficulty in paying attention to what is happening around, memory- inability to remember and recall information, thinking skills- poor planning, organization, problem solving and critical thinking. Memory is very essential to all our lives and plays an important role i.e. processing vast amounts of information in different forms. The inability of an individual to remember bits of information or behavioral skills is referred to as impaired memory. Memory impairment or memory loss is referred to as lack of a person's ability to recall information consistently. In the normal aging process, it is the working memory of the elderly that is affected i.e. attention, concentration and short term memory. Because, it involves conscious and active participation to temporarily maintain and manipulate information that one needs to keep in mind. The working memory has four components which process phonologic information, spatial information and an executive system which allocates attentional resources [6].

Age related changes play an important role in the life of an elderly as they in turn affect then their mortality and morbidity. Social and psychological stressors are a part of their daily life and are also a source of their life altering events. Social, psychological and biological factors can determine a person's mental health. Life stressors are common to all people, however, for many old adults it becomes difficult to handle or tackle. They are likely to experience events such as drop in socio-economic

status due to retirement, bereavement, inability to live independently because of limited mobility, chronic pain and other mental or physical problems. All the above factors can lead them to experience isolation, loneliness and various other psychological problems which cause them distress [7]. The various stressors which include acute and chronic medical illnesses, deterioration of physical abilities, depressive symptoms, cognitive deficits and distress of the loss of one's job, loss of financial resources, social status, loss of contemporaries, living alone, lack of support, high, health care costs, caring for a sick spouse, caring for grandchildren etc can cause extreme distress to the elderly. The presence of the above mentioned distress can in turn cause physiological, emotional and psychological distress to the elderly. Such as: insomnia, loss of appetite, frequent urination, muscle pain, tiredness, fears, restlessness, frustration, poor concentration, forgetfulness and also depressive symptoms.

The aim of the study was to study the relationship between depressive symptoms, and how these depressive symptoms experienced by geriatrics in turn affect their memory and general health.

The objectives of this study were

- To predict whether there is a gender difference between the depressive symptoms for geriatrics; males and females.
- To understand whether geriatrics with depressive symptoms have poorer memory compared to geriatrics without depressive symptoms.
- To understand whether there is no difference in the memory of geriatrics with and without depressive symptoms.
- To evaluate whether is there some interaction between the tendency for depressive symptoms and gender on memory of geriatrics.
- To predict whether there is a gender difference in general health for geriatrics with and without depressive symptoms.
- To predict difference in general health of geriatrics with and without depressive symptoms; irrespective of gender.
- To evaluate whether there is some interaction between the tendency for depressive symptoms and gender on the general health of geriatrics.

METHODOLOGY

The conducted study is a 'Non-Experimental, Quantitative research' study. They 'Survey technique' and 'face to face method' were used for data collection. Data on demographic background, marital status, occupation, family income, educational qualification and medical history were obtained using a standardized questionnaire during the face to face interview method. 'Purposive and Snowball' method of sampling was used for data collection. Hundred and twenty geriatrics of the age 60 years and above were used as participants. Sixty of them; males and females, were from the 'with depressive symptoms' group (30 each) and sixty of them; males and females, were from the 'without depressive symptoms' group (30 each). In order to classify the individuals into two different categories i.e. with depressive symptoms and without depressive symptoms, the Geriatric Depression Scale (GDS) [8], was administered and those who fell in the mild-severe category of the GDS, were put in the category of with depressive symptoms (both males and females). The similar procedure was applied for the individuals without depressive symptoms whose scores fell in the normal category of the GDS (both males and females).

A trained psychologist administered the three tools namely; the Geriatric Depression Scale (GDS), Wechsler's Memory Scale (WMS) [9] and the General Health Questionnaire-12 (GHQ-12) [10]. Depressive symptoms were assessed using the GDS. The GDS is a screening test used to measure severity of depressive symptoms in the elderly people. Each item is scored either 0 or 1. In order to classify the individuals into two different categories i.e. with depressive symptoms and without depressive symptoms, the GDS, was administered and those who fell in the mild-severe category of the GDS, were put in the category of with depressive symptoms (both males and females). The similar procedure was applied for the individuals without depressive symptoms whose scores fell in the normal category of the GDS (both males and females). Subsequently, the WMS and the GHQ-12 was administered on the same individuals who were classified as with and without depressive symptoms as per the GDS.

The research study consisted of 'Two Independent Variable and Two Dependent Variables'. The first independent variable; depressive symptoms, had two levels, that is, with depressive symptoms and without depressive symptoms. The second independent variable; gender, also had two levels, that is, males and females. The first Independent variable included 112 participants, that is, 56 with depressive symptoms and 56 without depressive symptoms. The second Independent variable consisted of the same 112 participants, who are further separated as per their respective gender. That is, the level of males included 28 males with depressive symptoms and 28 males without depressive symptoms. The level of females included 28 females with depressive symptoms and 28 females without depressive symptoms. The data was analyzed with the descriptive statistics i.e. mean and standard deviation for each condition. Further the inferential statistic i.e. the two- way or 2x2 between subjects randomized ANOVA (Analysis of Variance) was done along with a post hoc test i.e. Tukey's HSD (Honestly Significant Difference), to analyze whether the groups were statistically significant or not.

RESULTS

The calculated means and standard deviations for memory of males With and without depressive symptoms are 92.39, 20.87 and 102.11 and 18.02 respectively. The calculated means and standard deviations for memory of females with and without depressive symptoms are 85.21, 14.35 and 92.11 and 17 respectively. The calculated means for memory is greater in males with depressive symptoms compared to females without depressive symptoms. Hence, indicating gender differences in memory of males and females with depressive symptoms. The calculated 'F' ratio for memory in between gender i.e. males and females with and without depressive symptoms respectively are significant at 0.05 level, i.e., $F(1, 108) = 6.58$, $p<0.05$, one- tailed, indicating gender differences in depressive symptoms for memory. The calculated 'F' ratio for memory in geriatrics with and without depressive symptoms irrespective of gender is significant at 0.05 level, i.e., $F(1, 108) = 6.15$, $p<0.05$, one- tailed, indicating differences in memory irrespective of gender.

Therefore, the results of the research study support the alternate non- directional hypothesis which states that, there is some gender difference between the depressive symptoms for geriatrics; males and females [11] and also support the alternate directional hypothesis that, geriatrics with depressive symptoms have poorer memory in comparison to geriatrics without depressive symptoms, irrespective of gender

[12-14]. The calculated 'F' ratio for the interaction between the tendency for depressive symptoms and gender on memory of geriatrics is not significant. i.e., F (1, 108) = 0.18, n.s. Hence, not supporting the interaction hypothesis which states that, there is some interaction between the tendency for depressive symptoms and gender on memory of geriatrics.

The difference between the total Means of gender is 8.59 and the difference between the total Means of depressive symptoms is 8.30. Since the differences between the total Means of gender and depressive symptoms are greater than 6.63 i.e. the calculated values for Tukey's HSD (Memory), they are significant at 0.05 level, in other words, the chances of results occurring due to chance is less than five in hundred; $p<0.05$. The calculated means and standard deviations for general health of males with and without depressive symptoms are 4.32, 2.36 and 1.89, 2.2 respectively. The calculated means and standard deviations for general health of females with and without depressive symptoms are 5.54, 2.71 and 2.25, 1.69 respectively. The calculated means for general health is greater in females with depressive symptoms compared to males without depressive symptoms. Hence, indicating gender differences in general health of males and females with depressive symptoms.

The calculated 'F' ratio for general health in between gender i.e. males and females with and without depressive symptoms respectively are not significant at 0.05 level, i.e., F (1, 108) = 3.35, n.s. indicating no gender differences in depressive symptoms for general health. The calculated 'F' ratio for general health in geriatrics with and without depressive symptoms irrespective of gender is significant at 0.05 level, i.e., F (1, 108) = 44.32, $p<0.05$, one- tailed, indicating differences in general health of geriatrics with and without depressive symptoms, irrespective of gender. Therefore, the results of the study does not support the alternate non- directional hypothesis that, there is some gender difference in the general health of geriatrics with and without depressive symptoms and supports the alternate directional hypothesis that there is a difference in general health of geriatrics with and without depressive symptoms; irrespective of gender [15-18].

The calculated 'F' ratio for the interaction between the tendency for depressive symptoms and gender on the general health of geriatrics is not significant. i.e., F (1, 108) = 1, n.s. Hence, not supporting the interaction hypothesis which states that, there is some interaction between the tendency for depression and gender on the general health of geriatrics. The difference between the total means of gender is 0.79 and the difference between the total means of depressive symptoms is 2.85. Since the differences between the total Means of gender is lesser than 0.85, i.e. the calculated values for Tukey's HSD (General Health), it is not significant. The difference between the total Means of depressive symptoms is greater than 0.85, i.e. the calculated values for Tukey's HSD (General Health), it is significant at 0.05 level. in other words, the chances of results occurring due to chance is less than five in hundred; $p<0.05$.

Various other factors that were considered during the analysis of the data are marital status, employment status, source of income, educational level and presence/ absence of illness. Taking into consideration 'Males with Depressive symptoms' (n=28), 71% were married, 18% unmarried and 11% widowers. 36% were employed, 28% were unemployed and 36% were retired. Overall 50% have heir source of income from their children. 32% were not dependent on any other i.e. they either have their pension returns, work part time jobs e.g. tutors, while 18% were dependent

upon other sources of income such as; organizational funds for the needy, charity help groups, etc. 68% had an educational qualification of above S.S.C and 32% below S.S.C. 68% have an annual family income of >1, 00,000. Another, point to consider here is that although these men have depressive symptoms, 68% of them did not have any ongoing health issue that would cause them disturbances or distress. Since, most of the males with depressive symptoms were unemployed and retired, they were either dependent upon their children, other sources or are by themselves for monetary resources. Yet other factors like number of family members and total family income can also influence depressive symptoms.

Considering 'Males without Depressive symptoms' (n=28), 89% are married and 11 % unmarried. 50% are still employed, 35% are unemployed and 4 are retired. 43% depend upon their children for their sources. 50% have do not depend on others for their monetary needs i.e. they have either pension returns or are doing part time jobs and 7% depend on outside sources for their monetary needs. 22% had educational qualification below S.S.C and 78% were above S.S.C. 57% had ongoing illnesses and 43% did not experience any disturbances or distress [19]. For 'Females with Depressive symptoms' (n=28), 71% are married, 7% unmarried and 22% are widows. 71% are unemployed, 25% are employed and 4% are retired. 60% of the women depend on their children for monetary needs while other: depend upon their spouse (11%), some depend upon themselves (22%) as they do other jobs such as household chores for others, give tuitions as well as cater from home. 45% are educated below S.S.C and 55% above S.S.C. 57% of these women have ongoing illnesses (chronic as well as temporary) which causes them distress.

Considering factors such as unemployment, widows or single parent, unmarried females, monetary resources, as well as presence of illness, annual family income and the number of family members, can also influence depressive symptoms [20]. Females without Depressive symptoms' (n=28), 78% were married, 18% were widows and 4% were unmarried. 68% were unemployed, 25% were employed and 7% were retired. 57% of these women depend upon their children for monetary needs. 28% have their own sources of income. 11% depend upon their spouses and 4% depend upon other sources such as organizational funds and charity homes. 37% are educated below S.S.C. and 63% above S.S.C. 86% do not have any ongoing illnesses or distress while 14% have present ongoing illnesses.

CONCLUSIONS

Gender differences in depressive symptoms occur both for male and female geriatrics. Although gender differences among depressive symptoms are genuine and research shows that the female gender is more prone to depression, the following study denotes that males are more likely to have depressive symptoms compared to females. Some of the reasons for the following results could be- unemployment, early retirement, physical complaints (aches and pains), poor coping skills for life events and lack of monetary support to the family or being dependent upon the children for their living. Depressive symptoms do affect the memory, leading to difficulty in paying attention/ concentration, remembering/ recollecting information. The general health (physical and psychological) of geriatrics is also affected due to depressive symptoms, causing them distress, which in turn affects the activities of their daily living as well as coping skills for life events.

Some of the limitations of the study are, firstly, since data was collected from parks and various other groups such as church prayer groups, there was non-cooperation of the people as well noise which was confounding. Secondly some individuals would be comfortable enough with the language (English and Hindi); they preferred other languages like Marathi. Thirdly, although the control of minimum educational qualification was to be maintained, illiterate/ uneducated participants were also included. Fourth, data collection from one particular source or organization was unobtainable.

Since, it is found that geriatrics with depressive symptoms tend to have poorer memory compared to geriatrics with non- depressive symptoms; in order to prevent this, encouragement should be towards enhancing their cognitive skills, which in turn can have an impact on their memory. Gender differences in depressive symptoms that have occurred, can be due to a number of risk factors which the individual is exposed to. That is, take for example, how two different individuals are influenced by the same situation. Various other coping strategies can be taught to them, in order to help them handle their physical and psychological distresses. Gathering of information from one particular source (e.g. NGO's or old age homes only), can help give better results and also further better implications of the results.

REFERENCES

1. Erikson E. Identity : Youth and Crisis. WW Norton and Company ; 1968.
2. Sadock BJ,, Sadock VA. Synopsis of Psychiatry: Behavioral Sciences/ Clinical Psychiatry (10th ed.). Lippincott Williams & Wilkins ; 2012.
3. Demyttenaere K, Bruffaerts R, Posada-Villa J, Gasquet I, Kovess V, Lepine J, Chatterji S. Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization World Mental Health Surveys ; 2013.
4. Borson S, Bartels SJ, Colenda CC, Gottlieb GL, Meyers B. Geriatric mental health services research: strategic plan for an aging population: report of the Health Services Work Group of the American Association for Geriatric Psychiatry. Am J Geriatr Psychiatry 2001;9(3):191-204.
5. Simonds S. Depression and Women: An Integrative Treatment Approach. Springer Publishing Company ; 2001.
6. Budson AE, Price BH. Memory Dysfunction. New Engl J Med 2005;352(7):692-699.
7. Chan M. Mental health and development: targeting people with mental health conditions as a vulnerable group. World Health Organization. Retrieved from http://www. who. int/mental health/policy/mhtargeting/development targeting mh summary. Pdf ; 2010.
8. Yesavage JA, Sheikh JI. Geriatric Depression Scale (GDS) Recent Evidence and Development of a Shorter Violence. Clinical Gerontol 1983;5(1-2):165-173.
9. Wechsler D. Wechsler Memory Scale Revised. Psychological Corporation : San Francisco ; 1997.
10. Pevalin DJ. Multiple applications of the GHQ-12 in a general population sample: an investigation of long-term retest effects. Soc Psych Psychiatr Epidemiol 2000;35:508-512.
11. Kumar ND, Sudhakar TP. Prevalence of cognitive impairment and depression among elderly patients attending the medicine outpatient of a tertiary care hospital in South India. Int J Res Med Sci 2013;1(4):359-364.
12. Paterniti S, Verdier- Taillefer MH, Dufouil C, Aperovitch A. Depressive symptoms and cognitive decline in elderly people: Longitudinal study. Br J Psychiatry 2002;181:406-410.
13. Rajkumar AP, Thangadurai P, Senthikumar P, Gayathri K, Prince M, Jacob KS. Nature, Prevalence and factors associated with depression among the elderly in a rural south Indian community. Int Psychogeriatr 2009;21:372-378.
14. Matlin M. Cognition. (7th ed.). John Wiley & Sons Inc ; 2009.

15. Kizilbash AH, Vanderploeg RD, Curtiss G. The effects of depression and anxiety on memory performance. Arch Clin Neuropsychol 2002;17:57-67.
16. Stone J, Evandrou M, Falkinghan J. The transition to living alone and psychological distress in later life. Age Ageing 2013;42(3):366-372.
17. Halgin RP, Whitbourne SK. Abnormal Psychology: Clinical Perspectives on psychological disorders (6th ed.). Tata McGraw-Hill ; 2010.
18. Barua A, Ghosh MK, Kar N, Basilio MA. Socio- demographic factors of Geriatric Depression. Indian J Psychol Med 2010;32(2):87-92.
19. Radhakrishnan S, Nayeem,A. Prevalence of depression among geriatric population in a rural area in Tamilnadu. Int J Nutr Pharmacol Neurol Diseases 2013;3:309-312.
20. Poongothai S, Pradeepa R, Ganesan A, Mohan V. Prevalence of Depression in a Large Urban South Indian Population — The Chennai Urban Rural Epidemiology Study (Cures – 70). PLoS ONE 2009; 4(9):e7185.

Acknowledgements – Nil
Conflict of Interest – Nil
Funding – Nil