

MANUSCRIPT**Impact of Hand Injuries: Does It Lead To Depression In Elderly?****Priyanka*, Chitranshi⁺⁺**

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Ageing is a non-avoidable part of human physiology; causing loss of normal physiological processes. Hands get affected the most leading to loss of dexterity, grip strength and range of motion. The condition gets worse if it is superimposed by injury (bony or soft tissue). Any loss of ability to carry out even simple ADLs can add on to development of depressive disorders commonly depression in elderly. As a sequel of development of depression the already decreased functional ability of an injured elderly gets compromised further. Elderly population should be assessed for the mental disturbances thoroughly so that therapy can add on life to their years.

Purpose

To estimate the prevalence of depression among elderly patients suffering from hand injuries

Methods

A total of 51 patients (males:30 and females: 21) with mean age of 78 (males) and 70 (females) participated in the study. Patients with acute complications and those who were unable to understand instructions of were excluded from the study. Level of depression among elderly participants was assessed with Zung Self Rating Depression scale.

Results

Both males and females showed presence of depression in post injury phase. As found out by Zung Self Rating Depression scale participants were categorized as mildly depressed (males n=21, females n=1), moderately depressed (males n=8, females n=15), severely depressed (males n=1, females n=5). There was a significant difference in depression scores between males and females (post injury) wherein females were found to be more depressed ($t(2) = -5.8245, p \leq 0.000$)

Conclusion

The study has enlightened the feature that elderly population (male or female) get depressed following any kind of hand injury. According to this study males show a lesser tendency than females towards depression. Presence of such a mental status which can affect the quality of life of elderly population makes it necessary to have a diligent view on the assessment of patient suffering from hand injuries falling in age group of ≥ 65 years of age.

Key words: hand injury, elderly, depression, Zung Self Rating Depression Scale

INTRODUCTION

Hand is a unique aspect of our body which has a complicated function of accessing the environment around it[1]. Besides being an important source of nonverbal communication it serves a great role in functional independence of human beings[2] Depending upon the level of functional skill it possesses, the injuries occurring on hand can have a devastating effect on the psychological and physical aspects of an individual who suffers it. Hands are in a position where people tend to watch it almost all the time and they form a major portion of our social body image[3]. Age being an important factor contributing to prevalence of injuries in an individual, it becomes clear why is elderly individual more susceptible to injuries, most commonly in hands. Hand injuries in elderly people are more severe in nature and have more complex post injury functional deficit. This decrease in psychomotor skill in return leads to development of depression as post injury sequel. Thereby a vicious cycle is formed in terms

of injury leading to decreased functional capacity which in turn leads depression which again leads to decreased functional capacity which renders individual prone to injuries [4].

Depression has been defined by World Health Organization (WHO) as a common mental disorder characterized as loss of interest in activities, sadness and decreased energy to do the activities. Depression, an upheaving mental status, is a subcomponent of depressive syndromes which also includes dysthymia (chronic low mood) as a part[5]. In elderly population (age ≥ 65 years) depression may sometimes not be surfaced up initially because of the masking effect of the pseudodementia (impairment of cognition) and decreased or increased functional skills[6]. Therefore understanding depressive syndromes in older adults becomes a major health care assessment point to be taken care of. Affecting 350 million people over the world; Depression constitutes the major part of mental health disorders[7]. A meta-analysis stated that over the world prevalence rate of depressive disorders in elderly is up to 16% wherein India it has a rate of 21.9%[8]. Depression has a greater correlation with injuries in elderly; most commonly hand injuries; which has a common occurrence in elderly population. Regardless of the etiological background of hand injury it leaves a severe mark on psychological health of patients, rendering them incapable of good psychomotor capabilities [9].

Aim of the study

Keeping a view of the data available on presence of depression in elderly post hand injury the present study aims to find out the prevalence of depression in injured elderly and to evaluate whether there is a gender difference in development of depression after hand injuries

METHODS

Study Design

This was a community based study with cross sectional design conducted during October 2015 to July 2016. Ethical approval was taken from Ethical Review Committee of Dasmesh College of Physiotherapy (C/O DIRDS), Faridkot, Punjab.

Study setting

The study was carried out in Physiotherapy OPD, Dasmesh College of Physiotherapy in Faridkot district of Punjab state. A total of 51 patients (30 males and 21 females), aged 65

years or older, enrolling for Physiotherapy in OPD between October 2015 and July 2016, were studied. Patients were referred to this OPD from multispecialty hospitals of nearby areas and from Civil Hospital, private orthopaedic clinics and orthopaedic surgeons. The primary inclusion criteria was hand injury (soft tissue and bony). Patients (both males and females) aged 65 years or older were included in the study who could understand the instructions given in Zung Self Rating Depression Scale (Zung SDS). The exclusion criterion was presence of acute complications (stroke, recent MI, diabetes, mentally retardation, and those individuals who were unable to understand the instructions given in Zung Self Rating Depression Scale.

Outcome measures

Zung Self-Rating Depression Scale (Zung SDS)

A 20 item self-reporting questionnaire; was used to assess the level of depression.[10]. This non-referenced source of assessment is able to find out the presence of depression in adults falling in age range of ≥ 65 years. [11].

Time taken to complete the questionnaire is approx. 10 min and patient has to score ten positive worded and 10 negative worded questions[12]. Each item uses a 4 level Likert scale with four options ranging of 1 to 4 which when summed up can range from 20 to 80; scores above 70 indicate severe depression. This tool with a cut off score of 50 is used as clinically significant marker of depression[11],[13]. It can also be used to observe changes in any symptom of depression severity over the time in the studies assessing depression. The questionnaire is scored as per the following ranges of total scores:

- 25-49 Normal
- 50-59 Mildly Depressed
- 60-69 Moderately Depressed
- $\geq$ Severely Depressed[14]

Procedure

An informed written consent was signed by all the study participants enrolling in physiotherapy OPD of study setting for treatment. A standard Zung Self-Rating Depression Scale was used to screen depression in 51 elderly participants. The participants filled the questionnaire and were referred to a neurologist if they were diagnosed as mild to severely

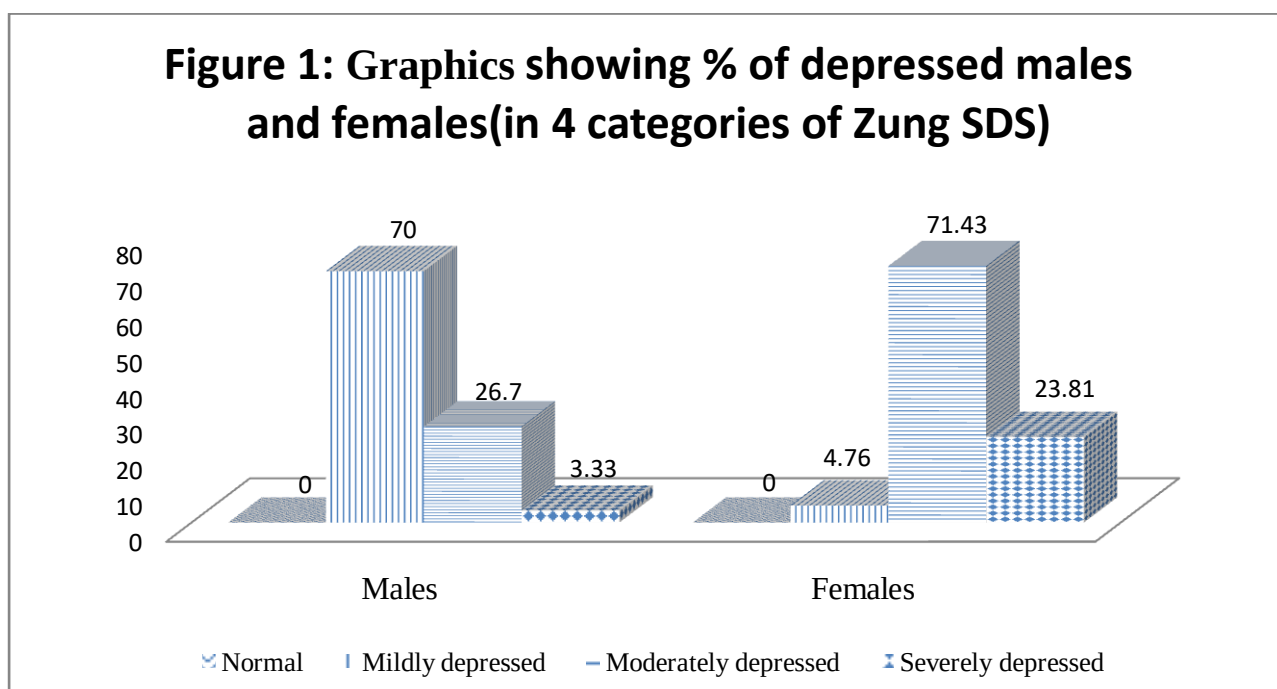
depressed. The researcher herself supervised the filling of questionnaires and instructions to fill were given if needed.

DATA ANALYSIS

Statistical analysis was performed using SPSS software version 17. In addition to the descriptive statistics methods (mean, SD) used for data analysis, significant difference in depression levels was found to be present between male and female on comparison through independent t-test. Wherein females were found to be more depressed than males ($t = -5.8245$, $p \leq 0.05$) (table 1).

RESULTS

A total of 57 patients suffering from any kind of hand injury were initially included in the study, out of which 2 dropped out of the study and 4 individuals backed out of the study. The study was completed with 51 patients (males $n = 30$ and females $n = 21$) all belonging to the age group ≥ 65 years. Anthropometric and lifestyle characteristics of the participants were not taken into consideration. The subjects were analysed for gender and age range matched with depression. It was found that elderly females were more prone towards depression than males wherein 23.81 % of females out of 21 were found to be severely depressed in comparison to males who were at 3.33% out of 30. The percentage of males and females in category of moderate depression was 26.7% and 71.43 respectively (figure 1).



*SDS=Self Rating Depression Scale

Table 1: Gender comparison of depression (t – test)

Gender	Mean Zung SDS	SD (scores of Zung SDS)	t- value (p value)
Male	56.63	6.29	-5.8245 (0.0000)*
Female	66.95	6.14	

*p<0.05, SDS = Self rating depression scale

DISCUSSION

The present study examined the presence of depression in hand injuries in elderly population belonging to age group of ≥ 65 years, reporting for the physiotherapy treatment to OPD (Dasmesh College of Physiotherapy). Our result is consistent with the findings of Grunert BK, Maqsd DP., 1993 and Lohman H, Royeen C., 2002 which showed that hand injuries have a great impact on patient's psychological status[1]. The results are independent of anthropometric and lifestyle factors of patients.

The greatest asset of human body is our hands with strength and fine manipulation as main role, thumb's capacity to work individually from rest 4 fingers makes hand a detailed vital complex; injury to which can be devastating for an individual's self-esteem leading to psychological impact mainly depression.[15]

It is an irony that in-spite of increase in the population percentage of the elderly in India at adistressing rate, there are only six relevant researches available from India covering 0.5% elderly population in comparison to 68 studies from all over world covering 99.5% of this population (elderly)[8]. Thus there was a need to conduct researches in this population aspect.

It has been clear from previous researches that elderly people are more susceptible to limb injuries. Approximately half of the injuries are limb injuries and about a quarter of them are injuries of hand[16]. The phase post injury; constitutes of emotional distress of the patient which further may include all or any one of the following features in patient: fear, depression, anxiety, frustration, sadness, resentment[9]. This fact is consistent with the result of our study

which showed 70% of males (n=30) mildly depressed, 26.7% moderately depressed, 3.33% were severely depressed. Out of 21 female participants 1 (4.76%) was mildly depressed, 15 (71.43%) were moderately depressed and 5 (23.81%) were severely depressed. This showed a greater tendency of females towards getting depressed after hand injuries.

These results were again found consistent with the findings of Williams LJ et al., 2014[4] which states that older females are more susceptible to depression post fracture of hand (bony injury). Study done by Lee et al., 1994 proved that Zung SDS is a valid measure to screen depression in elderly, wherein distinction can be made between individuals who are depressed and not depressed[17]. There was a need to evaluate the properties of this questionnaire at community level rehabilitation of elderly population [9].

It is noteworthy that the results of this study show the development of mental status which can be disastrous for the patient's physical as well as emotional aspects which can further cause decreased functional capacity[18]. Once the levels of depression are correctly found out in a patient, correct treatment initiatives can be taken for them. Considering the fact that depressive population can be a burden on society's economical strata, there is need to be more calculative about assessing depression in individuals suffering from hand injuries specifically falling into elderly age group.

LIMITATIONS

This study has some limitations though in it. Elderly with already impaired cognition or mental status should have been screened before. Anthropometric data of the patients could also have been taken into consideration, as it can have effect on the mental status of the patients. Also the time gap between injury and the time at which they were made to fill the questionnaire should have been decided.

CONCLUSION

To conclude elderly patient suffering from hand injury will develop mild to severe depressive symptoms which were found to be more in females than males (aged ≥ 65 years). Further research estimating the effect of different types of injuries on patient's mental status and the effect of physiotherapy on depression symptoms can be done.

FUTURE REFERENCES

It is strongly recommended that research should be carried on the spectrum of depression in elderly and its effect on elderly population's overall health status. This will add on life to the years they are going to live further as well as decrease the economic burden on society.

CONFLICTS OF INTEREST

There are no conflicts of interest for this study.

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