EVALUATING THE EFFECTIVENESS OF GROUP REMINISCENCE ON COGNITIVE AND MENTAL HEALTH AMONG OLDER ADULTS

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Health Sciences (Nursing Sciences)

by

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CERTIFICATE

This is to certify that the thesis entitled "**Evaluating the Effectiveness of Group Reminiscence on Cognitive and Mental Health among Older adults"** submitted by Mr. **T David Ratna Paul,** bearing Registration number **18MNPH02** in partial fulfillment of the requirement for the award of Doctor of Philosophy in Health Sciences (Nursing Sciences), at **School of Medical Sciences, University of Hyderabad** is a record bonafide work carried out by his under my supervision and guidance.

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Further, the student has the following publications before submission of the thesis for adjudication and has produced the evidence for the same in the form of an acceptance letter or a reprint in the relevant area of his research.

A. Published in the following publications:

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DECLARATION

I, **T David Ratna Paul**, hereby declare that this thesis entitled "**Evaluating the Effectiveness of Group Reminiscence on Cognitive and Mental Health among Older adults"** submitted by me under the guidance and supervision of Dr. VaralakshmiManchana, Assistant Professor, School of Medical Sciences, University of Hyderabad is an original and independent research work. I also declare that it has not been submitted previously in part or in full to this University or Institution for the award of any degree or diploma.

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ABSTRACT

Introduction: Geriatric depression is one of the most common challenges encountered in ageing adults. Early identification of geriatric depression and adopting measures to promote mental health and quality of life is essential. Early identification of cognitive impairment and adopting measures to promote cognitive health is essential for a better quality of life. Reminiscence is a psychosocial intervention and is one of the most effective non-pharmacological interventions to promote cognitive and mental health in older adults.

Aim: The present study's aim was to investigate the effectiveness of group reminiscence on cognitive impairment, depression and quality of life among older adults.

Methodology: The study was divided into phase one - Assessment phase (327) and Phase two - Intervention phase (130). The assessment phase was a descriptive cross-sectional survey, where participants were recruited and screened for the study variables such as cognitive impairment, depression and quality of life among 327 older adults. The MMSE, GDS and Quality of life assessment tools were utilized to assess the above outcome variables. In phase two, a Randomized control design was used to evaluate the effectiveness of group reminiscence among older adults. The participants included in this phase were Mild Cognitive impairment and Mild depression. Group reminiscence intervention for 12 weeks with 12 different themes was developed, which are focused on their life history and positive life experiences. Ethical approval was obtained from the University of Hyderabad Ethics Committee (UH/IEC/2021/34). Data was analysed with the help of Excel and SPSS-25 version.

Results:

The results show the effectiveness of group reminiscence with in the groups. The experimental group improved the pre-mean score MMSE from 19.83 to 20.62 after the 12 weeks of group reminiscence and was statistically significant (P= 0.000). Whereas between the groups, the experimental group exhibited a significant mean difference of -0.78 (SD 0.82), in contrast to the control group's mean difference of 0.14 (SD 0.83). The Z-value of -6.174 and a P-value of 0.000 indicate a statistically significant and large difference in the intervention's effectiveness, with an effect size (r) of 0.54, emphasizing the significance of the result. With regards to the depression, the pre-mean value of GDS was 6.95 (SD=0.86), decreasing to 5.92 (SD=0.71) post-intervention (Z=-6.681, p=0.000), and the mean difference was 1.03 (SD 0.64), while in the control group, it was -0.02 (SD 0.28). The Z-value was -8.809, with a P-value of 0.000, indicating a large and highly significant difference in the intervention's effect, as supported by the effect size (r) of 0.77. Quality of life was also improved from within the group and between the groups, respectively.

Discussion: Group reminiscence is dominantly seen as a nurse-led public health intervention in developed countries, but although the demand and need are prevailing, it is less common in India due to a lack of knowledge, preparedness, inadequate resources and a higher workload. This study developed and implemented the 12-week group reminiscence intervention for the selected study participants. The experimental group who received the intervention showed positive effects and was statistically significant.

Conclusion: The study concluded that the group reminiscence significantly improved cognition and quality of life and reduced depression among rural older adults

Key words: Cognitive impairment, depression, older adults, rural community and Group reminiscence.

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Abbreviations

CI- Cognitive impairment

GD- Geriatric depression

HAI- Help Age India.

MMSE-Mini Mental Status Examination

QoL- Quality of Life

RCT- Randomized Controlled Trial

UN- United nations

WHO BREF QOL- World Health Organization Brief Quality of Life

WHO- World Health Organization

WPP-World Population Prospects

GH-General Health

Overall QoL- Overall Quality of Life

NSO- National Statistical Office

NCCMH- National collaborating center for mental health

GR- Group Reminiscence

GDS- Geriatric Depression Scale

NGO- Non- Governmental Organization

NLM- National Library Medicine

Medline- Medical Literature Analysis and Retrieval System Online

CINHAL- Cumulative Index to Nursing and Allied Health Literature

IndMed- Indexing of Indian Medical Journals

OR- Odds Ratio

CI- Confidence interval

HDR- Hamilton Depression Rating scale

M+SD- Mena and Standard Deviation

CHAPTER-1
INTRODUCTION

The concept of ageing represents the natural and inevitable process of growing older, involving biological, psychological, social, and cultural factors. It covers physical changes like wrinkles and health-related shifts, psychological developments that include wisdom and potential cognitive challenges, social dimensions influenced by societal norms and policies, and cultural variations in the perception and treatment of the elderly. Ageing is a multifaceted concept that profoundly affects individuals and societies as they navigate the journey of life's later stages.

Ageing, often viewed negatively (William, 1957), is the biological process of growing older, marked by declining physiological functions and increased susceptibility to mortality (Medawar, 1952). It results from complex interactions among biological, psychological, behavioural, environmental, and social factors and is a significant risk factor for chronic diseases as individuals advance in age. The elderly phase comprises three sub-groups: young old (60-69), middle old (70-79), and very old (80 and above) (Forman, 1992).

Gerontology studies the effect of ageing's body, mind, and society, guiding strategies for improving elderly lives. Ageing is a gradual process that significantly impacts economics, politics, and society. Priority is given to promoting elderly health worldwide. Ageing is the natural biological changes with age, unaffected by diseases or environment. Maintaining the health of the elderly is crucial for their quality of life and societal contributions. WHO (2011) defines active Ageing as optimizing health, participation, and safety to increase the QoL as people become old.

Ageing is a universal process, commencing with conception, but related changes are unique to each individual, influenced by various biological, psycho-social

forces associated with potential changes such as reduced functional capacities, reducing stress coping adaptations and increasing the risk of age-related issues. Geriatric mental health, particularly depression, has become a concern due to the rapid growth of the elderly population. Ageing encompasses molecular, morphological, behavioural, psychological, and social changes, often accompanied by physical and financial challenges for geriatric individuals. Common symptoms in older adults include grief, neglect, and environmental issues, leading to feelings of loneliness, unhappiness, and inadequacy. These aspects are interconnected and impact the QoL. Biologically, ageing stems from accumulated molecular and cellular damage, resulting in gradual cognitive decline, increased disease vulnerability, and mortality. These changes vary among individuals, with some maintaining good health and others becoming frail. Beyond biology, external factors like retirement, housing shifts, bereavement, loneliness, and financial difficulties also shape the ageing experience.

The trend towards longer, healthier lives accompanies ageing but also comes with a rise in chronic illnesses. Ageing covers a spectrum of changes, from losing baby teeth to declining taste buds, with some affecting internal systems. While certain changes like grey hair are harmless, embracing these transformations rather than fearing the loss of youth can be more advantageous. Each person experiences these changes uniquely, influenced by various factors.

1.1 Demographical dimensions-Global:

The global population of older adults is steadily increasing, from 10% in 2022 to a projected 16% by 2050 (WPP, 2022). By that time, the number of older adults will exceed twice the count of children under five years old and be on par with those under 12. This ageing trend is substantial, with nearly 12% of the world's population being elderly by 2030 and an expected 16% by 2050 (WPP, 2022). These demographic shifts

have profound implications for healthcare, social support, and economic policies, demanding adaptation to reach the requirements (WPP, 2022). The global population is ageing, especially in Asia-Pacific countries, which is predicted to see a significant rise in older citizens by 2050. In Asia-Pacific, one in four people will be over 60, triple the number from 2010. To address this demographic shift, nations with ageing populations should implement policies that enhance social security and establish universal healthcare and long-term care systems.

1.2 Demographic transition in India:

India's older adult population has been gradually growing since 1961, with a significant increase after 1981 due to various factors such as better healthcare, increasing longevity, lower fertility rate and reduced mortality rates. Between 2001 and 2011, over 27 million elderly people were recorded (NSO, 2021, pp 16-18). In 2021, India had about 138 million elderly individuals, comprising 67 million males and 71 million females. They accounted for 10.1% of the population, set to rise to 13.1% by 2031(NSO, 2021, pp 16-18). This trend applies to both rural and urban areas, where the geriatric individual increased significantly from 1961 to 2011. Interestingly, the gender balance among the elderly has shifted over the past two decades, and it's projected that by 2031, there will be more elderly females than males. The elderly population grew by 36% from 2011 to 2021, similar to the growth observed from 1961 to 1981, while the overall population increased by 12.4% during the same period (NSO, 2021, pp 16-18).

In 2021, Kerala had the major proportion at 16.5%, followed by Tamil Nadu (13.6%), Andhra Pradesh (12.4%) and Telangana (9%). In contrast, Bihar had the lowest proportion at 7.7%, followed by Uttar Pradesh (8.1%) and Assam (8.2%). Looking ahead to 2031, Kerala is projected to maintain the highest proportion of elderly

people at 20.9%, followed by Tamil Nadu (18.2%), Himachal Pradesh (17.1%), Andhra Pradesh (16.4%), and Punjab (16.2%). (NSO, 2021, pp.19). The old age dependency ratio has been steadily rising, increasing from 10.9% in 1961 to 14.2% in 2011. Projections indicate it will further climb to 15.7% in 2021 and 20.1% in 2031. In 2017-18, economically dependent elderly men, both in rural and urban areas, relied primarily on financial support from their children, followed by their spouses, grandchildren, and others. A similar pattern was observed among elderly women (NSO, 2021, pp 34).

1.3 Ageing and Ageing Types

The World Health Organization (WHO) defines Ageing as "the process of becoming older, a process that is genetically determined and environmentally modulated." Ageing is a complex and inevitable process involving physiological, psychological, and social changes over time. Researchers, healthcare professionals, and society have long been intrigued by its intricacies. Understanding the types of ageing is essential, Biological ageing: Involves the gradual deterioration of biological systems, like cellular ageing leading to tissue dysfunction (López-Otín et al., 2013). Psychological Ageing: Encompasses cognitive decline, emotional shifts, and social adjustments. Social Ageing: Explores changing roles, relationships, and societal influences on one's identity (Whitbourne & Whitbourne, 2018). Healthy Ageing: Focuses on maintaining physical and mental well-being through lifestyle choices (diet, exercise, stress management) (Rowe & Kahn, 1997). Premature Ageing: Occurs due to genetic, environmental, or health factors, leading to age-related issues at a younger age. Successful Ageing: Aims to optimize well-being by adapting to ageing challenges while enjoying a fulfilling life (Rowe & Kahn, 1997). These types of ageing offer insights into addressing the complexities and opportunities associated with an ageing population.

1.4 Impact of Ageing on Biological, psychological, social and Cognitive factors

Ageing put forth profound effects on human development, impacting various facets, including biology, psychology, social interactions, and cognition.

1.4.1 Biological Factors:

Involves the gradual deterioration of biological systems, like cellular ageing leading to tissue dysfunction. Physically, ageing often results in declining health and an increased prevalence of chronic diseases (Center for Disease Control and Prevention, 2021), while sensory changes in vision, hearing, and taste can significantly influence daily life. Furthermore, the weakening of the immune system with age renders older adults more vulnerable to infections (Nikolich-Zugich, 2018).

1.4.2 Psychological Factors:

Psychological ageing pertains to changes in cognitive, emotional, and social aspects of an individual's life. Emotional well-being may shift, potentially leading to increased susceptibility to conditions such as depression and anxiety (Blazer, 2003), but older individuals frequently exhibit heightened coping skills and resilience (Aldwin & Levenson, 2004). Socially, ageing can bring about social isolation due to factors like retirement and the loss of loved ones (Cornwell & Waite, 2009), while older adults' roles within families, such as caregivers or grandparents, can reshape family dynamics (Pillemer & Suitor, 2006). The impacts of ageing on psychological factors, particularly depression, are critical to understanding the mental health challenges faced by older adults in society.

Depression in older adults:

Geriatric Depression is the most widespread mental disorder globally, affecting 322 million people, with prevalence rates ranging from 4 to 43% for all forms and 1 to 4%

specifically for major depression (Manju et al., 2020). The estimated prevalence of depression varies significantly, ranging from 12.7% to 53.7% in rural older adults (Behera, P et al., 2016). Risk factors for depression in older adults include chronic illnesses, limited mobility, grief, elder abuse, separation, and loss of income, which are also common risk factors across different age groups (Fiske, Wetherell, & Gatz, M., 2009). An analysis of data from 51 studies across 16 states in India revealed a prevalence of 34.4% (95% CI: 29.3-39.7) among the geriatric population, with higher rates among females, those staying in remote settings, and in the eastern part of the country (Manju et al, 2020).

Among the various mental health issues, depression poses the most significant risk for the elderly. Depression affects an individual's value and increases the need for others. Early recognition, diagnosis and early intervention, like an initiation of treatment and providing rehabilitation for depression, will prevent suffering/ premature death and provide a productive life and autonomy (Grover and Malhotra 2015).

Symptoms of depression include persistent sadness, loss of interest, fatigue, difficulty concentrating, thoughts of death, agitation or retardation, along with autonomic symptoms, constipation, poor concentration, slow thinking, and anxiety (Beck et al., 2014). Neuropsychiatric symptoms describe behavioural or mood disturbances such as depression and apathy (Porsteinsson and Makino, 2012). These symptoms are commonly established among patients with dementia and compound their disability and the burden experienced by their caregivers (Lyketsos et al., 2002). Depression is not only declines the QoL but also affects the diagnosis of other diseases that worsen disability.

According to National Collaborating Centre for Mental Health (2010) the pathophysiology of depression involves imbalances in neurotransmitters like noradrenaline, serotonin, and cortisol, along with structural brain changes. These imbalances in the chemicals used for brain cell communication affect people of all ages and are considered abnormal. Brain-imaging studies have revealed that in depression, the paths accountable for mood regulation, thinking, sleep, appetite, and behaviour do not function correctly.

Depression is a major factor in rising healthcare costs and is expected to become the primary source of disease burden in developing countries by 2030. Depression is a higher risk in older adults with a high mortality rate. Cognitive and functional decline, along with anxiety, are more prevalent in the elderly with depression compared to youth (Rodda, Walker & Carter 2011).

1.4.3 Cognitive Factors

Regarding cognition, memory, and problem-solving abilities often decline with age, yet older individuals often showcase wisdom and expertise from life experiences (Salthouse, 2019; Baltes & Staudinger, 2000). Recognizing these multifaceted impacts is essential for delivering comprehensive healthcare, social support, and psychological interventions tailored to the ageing population's needs.

Mild Cognitive impairment in older adults

Mild Cognitive Impairment (MCI) is a medical condition characterized by noticeable cognitive changes that are more pronounced than what is typically associated with normal Ageing but not as severe as those seen in dementia. Individuals with MCI may experience difficulties with memory, thinking, and reasoning beyond what is expected for their age but do not significantly interfere with their daily activities or independence (DeCarli, 2003). MCI can be considered a transitional stage between normal cognitive

Ageing and more serious cognitive conditions like Alzheimer's disease or other forms of dementia. It's essential to monitor and evaluate individuals with MCI because some may progress to dementia over time, while others may remain stable or even improve. Early detection and intervention can be valuable in managing cognitive changes associated with MCI.

The global prevalence of MCI varies from 8.73% to 10.03%, depending on age and severity (Bai et al., 2022). As the global population continues to age, especially in urban areas, understanding the relationship between urbanization and MCI prevalence is essential for effective public health planning and resource allocation. Cognitive impairment not only impacts the QoL of older adults but also increases the risk of dementia mortality (Roberts & Knopman, 2013). In lower-income countries, the majority of individuals with cognitive impairment accounted for 60% in 2001, projected to reach 71% by 2040 (Ferri et al., 2005). In 2000, India had 3.5 million Alzheimer's/dementia patients, compared to 4.5 million in the United States (Upadhyay, Panjwani, & Yadav, 2014). Age, gender, and education level are established risk factors for cognitive impairment (Roberts & Knopman, 2013). Indicators of the CI were reported in table (1)

Table 1. Indicators of Cognitive Impairment

Indicator	Description
Memory Loss	Frequent forgetfulness of recent events. Difficulty recalling names, dates, or conversations.
Language Problems	Struggling to find the right words or losing train of thought mid-sentence. Difficulty expressing oneself clearly.
Impaired Judgment	Making poor decisions or showing poor judgment in situations that were previously manageable.
Difficulty with Complex Tasks	Struggling with tasks that require multiple steps or processes, such as managing finances or following a recipe.
Misplacing Items	Frequently misplacing items and being unable to retrace steps to find them.
Disorientation	Becoming lost or disoriented in familiar places.

Reduced Attention Span	Shortened attention span, easily distracted, or unable to focus on tasks for a reasonable period.
Problems with Planning	Difficulty organizing and planning tasks, even those previously routine or familiar.
Difficulty with Learning	Slower acquisition of new information or difficulty learning new skills or concepts.
Personality and Mood Changes	Noticeable changes in personality or mood, such as increased irritability, anxiety, or apathy.
Decline in Social Engagement	Withdrawing from social activities or hobbies that were previously enjoyed.
Trouble with Visual Perception	Difficulty recognizing familiar faces or objects, problems with depth perception, or spatial awareness.
Problems with Word Finding	Struggling to remember the names of common objects or familiar people.

Development of Dementia:

Dementia is a condition with various potential causes and factors contributing to its development. There are several key factors and stages in the development of dementia. Preclinical, MCI and Dementia are stages of cognitive decline that precede clinically evident symptoms (Chen et al 2021).

Preclinical Stage:

This is the earliest stage of cognitive decline and often occurs years before any noticeable symptoms. Individuals at this stage may have changes in their brain structure or function, but they are still able to perform their daily activities and have no noticeable cognitive impairments. The goal of identifying preclinical stages is to intervene early to potentially delay or prevent the progression to more severe cognitive disorders.

Mild Cognitive Impairment (MCI):

MCI is a midway stage between normal age-related cognitive decline and more severe cognitive impairments associated with dementia. Individuals with MCI often experience noticeable cognitive changes, such as memory problems, but these changes are in adequate to interfere significantly with daily functioning or independence. MCI can be classified into two main subtypes: Amnestic MCI is primarily involves memory

problems. In comparison, Non-amnestic MCI involves cognitive changes other than memory, such as language, attention, or executive function deficits. Some people with MCI remain stable or even revert to normal cognitive function, while others progress to dementia.

Dementia:

Dementia represents an advanced stage of cognitive decline, marked by notable impairments across multiple cognitive areas like memory, language, executive function, and judgment. Common types of dementia include Alzheimer's disease, vascular dementia, Lewy body dementia, and frontotemporal dementia, among others. Dementia leads to a substantial loss of independence in daily activities and profoundly impacts an individual's quality of life. Detecting and intervening in the early stage is essential for managing dementia, as some forms may be treatable or manageable with prompt diagnosis.

1.4.4 Sociological Factors:

Ageing can impact an individual's social engagement and level of physical activity in several ways, often leading to increased isolation and reduced activity. The impacts of ageing on sociological factors, particularly on an individual's quality of life, are multifaceted and central to understanding the older adults' experience in society.

Quality of life (QoL) among older adults

Ageing can significantly affect an individual's overall quality of life, influenced by various sociological factors. Factors such as access to healthcare, financial security, social support networks, and the availability of community resources play pivotal roles in shaping the QoL. The Quality of life is a multidimensional concept which includes physical, psychological, and social aspects. It can assess both personal and situational domains to include a person’s overall functioning. World Health Organization (WHO,

1996) defined QoL as an individual's insight of their situation in life, in the framework of the beliefs in which they live, and in relative to their aims, opportunities, morals, and concerns. Out of 91 countries, India ranks 73 in Quality of Life among the elderly population as per the global watch index. (Durgesh 2020). Physical abuse, emotional abuse, neglect, abandonment, sexual abuse, and self-neglect affect the elderly QoL (NCEA, 2020). In India, the QoL was affected by major health issues (Agarwal 2014 & Kwan 2016).

1.5 Relationship between Depression and Cognitive impairment and Quality of Life

Depression and cognition are two significant factors linked to the QoL experienced by individuals. The relationship between these two aspects can deeply affect numerous dimensions of an individual's well-being and overall quality of life.

Depression and Quality of Life:

Depression, characterized by persistent feelings of sadness, hopelessness, and a lack of interest in activities, can significantly diminish one's quality of life. Individuals facing depression experience a kind of negative feelings, reduced social activity, and reduced motivation (Beck and Alford, 2009). These psychological and emotional worries can lead to a reduced sense of purpose, weakened self-esteem, and tense relationships, all of which pay to a lower QoL (Diener and Suh1997). The influence of depression on QoL ranges from physical health as well. It can aggravate existing health illnesses, increase the perception of pain, and disrupt sleep patterns. Further, it disturbs the sense of well-being and life satisfaction (Kessler and Bromet 2013).

Cognitive impairment and Quality of Life:

Cognition, including mental processes like thinking, memory, and decision-making, is a fundamental component of daily functioning and overall quality of life. Cognitive capabilities allow persons to direct the challenges of life, get involved in expressive

activities, and uphold a sense of individuality. Cognitive impairment, whether due to age-related decline, neurological conditions, or other factors, can deeply effect an individual's ability to carry out everyday tasks. As cognitive function drops, individuals may experience problems in managing finances, maintaining personal hygiene, and contributing in public activities. These challenges can lead to hindrance, a sense of helplessness, and a reduced sense of independence, all of which contribute to poor quality of life (Logsdon, Gibbons, McCurry and Teri, 2002).

The association between depression and cognition in elderly is a specific concern. Managing depression in this population can have important implications for preserving cognitive function (Butters et al., 2004). The relationship between depression and cognition is bidirectional and complex. Depression can impair cognitive functioning, leading to difficulties in concentration, memory recovery, and problem-solving. Conversely, cognitive impairment can lead to the risk of developing or worsening depressive symptoms (Alexopoulos 2005). Together, depression and cognitive impairment can create a serious cycle that significantly diminishes an individual's overall quality of life (Shelin et al., 2006). These challenges can limit social interactions, reduce engagement in meaningful activities, amplify feelings of isolation and highlight the importance of a holistic approach to healthcare and well-being. By addressing these factors in tandem, we can work towards enhancing the overall quality of life for individuals facing these challenges.

1.6 Challenges in connection to inadequate social and healthcare resources:

Old age is associated with significant loss in physical, social and cognitive domains (Urry & Gross 2010). Various health problems, decline in physical health, physiological problems, mental disorders, emotional problems, and social problems of

the elderly population push them to seek specific medical care. Older adults present health challenges such as increasing disease and disability, especially the burden of cognitive dysfunctions (Crimmins et al., 2011). The challenges faced by older adults in rural India are complex, including healthcare, financial security, social well-being, and more. The following issues are the main challenges faced by older adults in India.

Age-Related Health Issues

Older adults in rural India often struggle with age-related health problems, including chronic diseases, mobility issues, and cognitive decline. Access to healthcare facilities for dealing with these disorders is limited, leading to poorly managed health issues. To address these issues, preventive healthcare programs, regular health check-ups, and lifestyle interventions to promote healthier Ageing are required.

Lack of Geriatric Care

Geriatric care focuses on the unique health needs of older adults and is often missing or least available in rural India. Most of the health care providers or professionals' training does not include or is inadequate to address the specific health needs and challenges of an ageing population, leading to less-than-optimal care for older adults. Older adults require specialized care due to the complexities of ageing, including cognitive declines. However, the accessibility of geriatric care facilities is limited in rural areas, leaving older adults without the required provision.

Limited Access to Healthcare

One of the most demanding challenges faced by older adults in rural India is limited access to healthcare. In rural areas, healthcare infrastructure can be inadequate, creating challenges for older individuals to access timely medical services. Operational barriers like a shortage of specialized doctors and limited media coverage further hinder rural residents from accessing essential health information, particularly those with limited

health literacy (Chen et al., 2019). Healthcare facilities are usually focussed in urban centres, leaving rural communities underserved.

Financial Insecurity

Financial insecurity is an important concern for the older population in rural India. Inadequate pension schemes and unemployment make many older individuals financially vulnerable. They may depend on family support, which can be inadequate as their children migrate to urban areas in search of better employment opportunities. Papola (2013) suggested the need for complete financial security measures for older adults with boosted pension schemes and social support.

Loneliness and Social Isolation

Loneliness and Social isolation are dominant among rural older adults (Manchana, 2023). The older population feels loneliness when their children leave for education or employment. Loneliness can have detrimental effects on mental and emotional well-being. The activity of daily living and advanced age are the factors that cause older adults to feel social isolation (Kotian et al., 2018). The importance of creating opportunities for social engagement and integrational interactions is necessary.

Elder Abuse and Neglect

Elder abuse and neglect are distressing issues affecting older adults in rural India. Abuse can take several ways, including monetary misuse, emotional abuse, and neglect. Older individuals may be reluctant to report abuse due to fear or lack of awareness about their rights. People should awareness the legal defences, and support system to stop and address elder abuse.

Lack of Awareness

Many older adults in rural India are not aware of government schemes and programs designed to support them. This lack of awareness can result in missed opportunities for

financial assistance, healthcare services, and social support. Outreach efforts and awareness campaigns should improve to ensure that older adults are informed about the availability of government schemes.

Housing and Infrastructure

Inadequate housing and living conditions can be challenging for Indian rural older adults; these lack the basic requirements and accessible features. The living conditions of older adults in rural India can be challenging, with inadequate housing conditions that lack basic amenities and accessibility features. This can further exacerbate the difficulties faced by older individuals in their daily lives.

In conclusion, addressing these challenges requires a holistic approach involving government interventions, community support, and awareness campaigns to improve the well-being of this older adult population.

1.7 Reminiscence as a preventive strategy to address cognitive and mental health

Reminiscence can be described as the act of recalling personal memories from the distant past, encompassing long-term recollections of events in which the individual was either directly involved or an observer (Ross, 1989). These memories hold significant personal relevance, and they may resurface spontaneously triggered by various stimuli like smells, thoughts, or images. Moreover, reminiscence can also be intentionally evoked to serve specific purposes, such as entertaining others or finding solutions to problems. In simpler terms, reminiscence involves the deliberate or involuntary process of recollecting one's own past experiences (Bluck & Levine, 1998).

1.7.1Taxonomy of Reminiscence

Webster (1993, 1997) conducted a factor analysis to identify distinct uses of reminiscence, which he classified into various categories: Identity, Problem-Solving,

Death Preparation, Teach-Inform, Conversation, Bitterness Revival, Boredom Reduction, and Intimacy Maintenance.

Identity: This involves using memories to find coherence and meaning in one's life, deriving a sense of worth from past experiences.

Problem Solving: Memories are recalled to address current challenges and find solutions based on past experiences.

Death Preparation: This category encompasses using memories to come to terms with one's mortality and the finitude of life.

Teach-Inform: Memories are shared with others to convey life lessons and provide valuable insights.

Conversation: Reminiscing in a social context without any evaluative or instructive intent, simply sharing personal memories.

Bitterness Revival: Involves revisiting memories of difficult life circumstances, possibly leading to feelings of bitterness.

Boredom Reduction: Memories are used to fill voids of stimulation or interest, combating feelings of boredom.

Intimacy Maintenance: Keeping the memories of a significant other alive, especially when they are separated due to death.

Additionally, Westerhof et al. (2010) proposed three types of reminiscence based on their impact on mental health:

Positive Reminiscence: Includes Identity, Problem Solving, and Death Preparation, which contribute positively to mental well-being.

Dysfunctional Reminiscence: Comprises Bitterness Revival, Boredom Reduction, and Intimacy Maintenance, which may have negative effects on mental health.

Social Reminiscence: Involves Conversation and Teach-Inform, highlighting the social and interactive aspects of reminiscing.

According to Westerhof et al. (2010), reminiscence work can be classified into three categories:

Simple Reminiscence: This category involves the act of sharing chosen personal stories and memories with others. It is a more casual and unstructured form of reminiscing.

Life Review: In this type of reminiscence, individuals engage in a structured process of recalling and evaluating their entire life. It includes a comprehensive review of past experiences.

Life Review Therapy: This form of reminiscence is utilized specifically to promote positive memories rather than dwelling on negative ones. It is commonly employed as a therapeutic approach for individuals dealing with severe mental health conditions.

Simple reminiscence is most suitable for the elderly and serves as a gentle and straightforward approach to reminiscence, focusing on enhancing positive emotions and feelings. One of its common applications is in reminiscence groups within nursing homes, where individuals are provided with prompts to recall and share positive memories. Moreover, this form of reminiscence has also found recent use in groups aimed at fostering intergenerational connections.

Life review is particularly well-suited for individuals who deal with a sense of purpose or face challenges coping with life's transitions and adversities. The primary objective of life review is to strengthen various aspects of mental well-being, and this can be achieved by stimulating the reminiscence functions of identity construction and problem-solving. Through life review, individuals gain valuable insights into their

personal development and the journey that has shaped them into the individuals they are today. For those who struggle with finding purpose or adapting to life changes, life review offers a valuable tool for personal growth and enhanced mental health.

Life-review is predominantly employed in care settings, specifically targeted at older individuals grappling with severe mental health issues like depression or anxiety. The primary aims of this therapeutic approach are to facilitate self-transformation and lessen the symptoms associated with cognitive and mental health issues. To achieve goals, the focus is placed on reducing bitterness revival and combating boredom while also stimulating the positive functions of reminiscence.

1.7.2 The effectiveness of reminiscence intervention

In recent decades, numerous studies have examined reminiscence interventions, resulting in varied and sometimes conflicting findings (Merriam, 1980; Revere & Tobin, 1980; Thornton & Brotchie, 1987). Questions arose about the effectiveness of this intervention and early reviews indicated limited evidence (Kovach, 1990; Molinari and Reichlin, 1984; Thornton and Brotchie, 1987). However, recent reviews and meta-analyses have shown that reminiscence interventions can enhance well-being and reduce depression (Bohlmeijer, Smit, and Cuijpers, 2003; Hsieh and Wang, 2003). They've also been effective in dementia care (Woods et al., 2005). It's important to note that the effectiveness varies among different interventions due to diverse goals and target groups.

1.7.3 Benefits of Group Reminiscence

Reminiscence is a therapeutic approach that involves encouraging individuals, particularly older adults, to recall and share memories from their past. It utilizes the power of storytelling and nostalgia to improve cognition, emotions and QoL. Here are some of the uses and benefits of reminiscence:

Enhances Memory: Engaging in reminiscence can help stimulate memory recall. It allows individuals to revisit past events and experiences, which can lead to a more vivid recollection of memories, even for those with cognitive impairments like dementia (Westerhof and Bohlmeijer, 2014; McDaniel and Einstein, 2011).

Emotional Expression: Reminiscing about past experiences can provide an outlet for emotional expression. It allows individuals to process and share their feelings, leading to emotional catharsis and a sense of relief (Tam et al., 2021).

Self-Identity and Self-Esteem: Remembering and sharing stories from the past can help individuals maintain a sense of self-identity and continuity. It reminds them of their life accomplishments, roles, and contributions, boosting self-esteem and confidence (Tam et al., 2021).

Social Connection: Reminiscence is often conducted in group settings, encouraging social interaction and bonding among participants. This fosters a sense of belonging and reduces feelings of isolation and loneliness (Pinquart, & Sörensen, 2003).

Reduce Anxiety and Depression: Engaging in reminiscence can have a calming effect on individuals, reducing anxiety and symptoms of depression. It provides a positive distraction from current stressors and allows them to focus on positive aspects of their past (Thompson et al., 1987).

Validation of Life Experiences: For some individuals, particularly those who may feel their contributions have been forgotten or overlooked, reminiscence provides validation of their life experiences and the impact they've had on others (Butler, 1963).

Coping with Loss: For those dealing with grief and loss, reminiscence can be a helpful tool to process feelings and memories related to the departed. It aids in the grieving process and can facilitate acceptance and healing (Stroebe et al., 2017).

Improves Communication Skills: As participants share their stories, they practice and develop their communication skills. This can be particularly beneficial for individuals who may have difficulty expressing themselves verbally (Haight et al., 1998).

Sense of Purpose: Reminiscence can help individuals find meaning and purpose in their lives by reflecting on their experiences, relationships, and life lessons.

Interdisciplinary Applications: Reminiscence is versatile and can be integrated into various settings, including elderly care facilities, hospices, mental health centres, and rehabilitation programs.

Family Bonds: For older adults, reminiscence can be an opportunity to share personal history with family members, strengthening intergenerational bonds (Burnside, I., & Haight, B 1994).

Overall, reminiscence is a valuable approach that promotes emotional well-being, stimulates cognitive function, and fosters social connections, making it a beneficial intervention for a wide range of individuals, especially seniors and those with cognitive or emotional challenges.

1.7.4 Functions of group reminiscence

Group reminiscence serves several functions and can be applied in various settings. Here are some of the key functions of group reminiscence: Social connection (Remen, A. L., & Baum, N. 1982), Validation of Life Experiences (Webster, J. D.,1997), Enhancement of Self-Identity and Self-Esteem (Houde, S. C., & Landreville, P., 2007), Emotional Expression and Catharsis (Kruse, J. L., & Prewitt, E. A., 1982), Coping with Loss and Grief (Adams, K. B., Sanders, S., & Auth, E. A., 2004), Enhancement of Communication Skills: (Haight, B. K., Webster, J. D., & Landau, J., 1997), Stimulation of Cognitive Function (Wang, X., & Fawley-King, K., 2014), Reduction of Anxiety and Depression (Boerner, K., Jopp, D., & Carr, D., 2012), Sense

of Purpose and Meaning in Life (Cohen-Mansfield, J., 1995), Interpersonal Bonding and Emotional Support (Parker, G., & Stimson, B., 1987). These sources should provide you with more detailed information on the functions and benefits of group reminiscence and its applications in various contexts. Please note that some of these references may require access to academic databases or subscriptions to view the full texts.

1.8 Significance and Need for the Study

As individuals approach retirement or reduce social roles, they may encounter declines in physiological, psychological, and social well-being. While these losses vary, not all older individuals require care or assistance, and they may remain independent. However, for some, these declines can leave them emotionally and physically vulnerable. The rising occurrence of psychopathological and social issues in old age, such as isolation and loneliness, highlights the need for effective therapeutic interventions. Evaluation becomes essential not only to demonstrate the efficacy of new therapeutic approaches but also to assess the effectiveness of interventions applied to the population. Within the older demographic, evaluating the relative effectiveness of different techniques for various subgroups can aid professionals in selecting and implementing interventions wisely.

1.8.1 Geriatric Care in Indian Rural Communities

Geriatric care in Indian rural communities is an important issue due to the increasing elderly population in these areas. According to the 2011 Census of India, the proportion of the rural elderly rose from 5.6% in 2001 to 6.5% in 2011 (Census of India 2011). This population is often neglected due to a lack of resources and specialized care. However, with the implementation of various government initiatives, geriatric care in rural areas is slowly improving. In rural India, older adults face unique challenges in accessing healthcare services due to a lack of infrastructure, limited

resources, and a shortage of healthcare providers. Geriatric care is often not a priority, and older adults may receive inadequate healthcare services or none at all.

The National Programme for Health Care of the Elderly (NPHCE), was launched by the Government of India in 2010 to address various health-related problems. The aim of this program is to deliver comprehensive and combined health care services to senior citizens, including those in rural areas (MHFW, 2010). Under this program, various services are provided, such as geriatric clinics, mobile health units, and training to the health care professionals.

In addition, non-governmental organizations (NGOs) have also played an important role in enlightening geriatric care in rural areas. One such organization is Help Age India, which has been working in India since 1978 to improve older adults' needs (Help Age India, 2022). They provide various services, such as mobile health clinics, free cataract surgeries, and community-based care programs.

Despite these initiatives, there are still challenges in providing adequate geriatric care in rural areas. One major issue is the shortage of trained health care professionals. According to a study conducted in rural Uttar Pradesh, only 26% of health care providers had received any training in geriatric care (Arora 2015), which highlights the essential for better training for health care professionals in geriatric care. Furthermore, there is a lack of infrastructure and resources in rural areas, making it difficult to provide specialized care to the elderly population. For instance, access to diagnostic facilities and medications may be limited in these areas. Additionally, social and cultural barriers can also hinder the provision of geriatric care in rural areas.

To improve geriatric care in rural India, a multidisciplinary approach is needed, involving healthcare providers, policymakers, and the community. One potential solution is to implement community-based care programs that provide older

adults with access to healthcare services and education on preventive health practices. Geriatric care in rural India is a complex issue that requires attention from all stakeholders. To improve the QoL for older population, it is essential to increase access to healthcare services, educate older adults on preventive health practices, and implement community-based care programs. Despite these challenges, efforts are being made to improve geriatric care in Indian rural communities. With increased government support and the involvement of NGOs, it is hoped that the health needs of the elderly in these areas will be better addressed.

1.8.2 Reminiscence intervention for cognitive and mental health

In recent years, the significance of reminiscence in successful ageing has gained attention due to its positive impact on older adults' mental health, especially in depression (Cappeliez & O'Rourke, 2006; Wong & Watt, 1991). Gerontologists, building on Butler's (1974) idea of life review as a crucial aspect of ageing, have recognized reminiscence as a valuable contributor to well-being in later life and have promoted its use as a therapeutic tool for enhancing psychological health. Research by Shellman and Zhang (2014) reported the connection between how individuals review and interpret their life experiences and personal relationships and their mental health and overall well-being in later life.

Reminiscence is a natural process of recalling the past that spans a person's lifespan. It involves voluntarily retrieving meaningful autobiographical memories associated with significant life events. Reminiscence influences emotional memories from the past, aiming to stimulate the senses (Peix, 2009). Extensive theoretical research (Westerhof & Bohlmeijer, 2014) has paved the way for structured reminiscence interventions. These interventions are designed to harness reminiscence's

positive functions, such as narrative, integration, and practicality, with the goal of improving mental health.

The tendency of older individuals to reminisce about the past has historically been viewed as a psychological concern, often associated with cognitive decline or loneliness (Lewis & Butler, 1974). However, when seen as a form of life review, reminiscence can have therapeutic value. This paper explores the nature of life review, its motivations, and functions, highlighting how therapists can benefit from embracing reminiscence in their work with elderly clients. One key advantage is the improvement of the client-therapist relationship (Harris & Harris, 1980), offering numerous benefits in healthcare.

1.8.3 Why Group Reminiscence is an effective public health intervention:

- Reminiscence can be highly beneficial for older adults, especially those with cognitive impairments or dementia.
- It helps stimulate memory recall, fosters a sense of identity and purpose, and promotes emotional well-being in this population.
- Reminiscence can be useful for individuals seeking emotional healing, validation, and self-reflection.
- Sharing positive memories and experiences in a supportive group setting can improve mood and life satisfaction.
- Reminiscence, particularly in a group setting, can address feelings of isolation and loneliness by providing a sense of community and connectedness with others who share similar life experiences.
- For individuals looking to validate their life choices and achievements, reminiscence offers an opportunity to review their life story and gain a sense of accomplishment.

1.9 Gaps in the existing evidence:

Research on rural older adults is crucial to address the unique challenges and healthcare needs of this population. Rural older adults often face issues to accessing healthcare, including limited healthcare facilities, transportation issues, and healthcare provider shortages. Research is required to investigate the extent of these disparities, their impact on health outcomes, and potential solutions to improve healthcare access in rural areas. Rural areas may have higher rates of social isolation and limited mental health resources. Research should focus on understanding the mental health challenges faced by rural older adults and developing non-pharmacological interventions to lessen social isolation and progress mental well-being.

Based on the gaps found in the existing evidence, our study aims to examine the effectiveness of group reminiscence on cognitive functions, depression and quality of life in older adults.

To conclude, in the introduction chapter, the background and need for the study were explained with a few supporting studies and various challenges facing older adults. Discuss the importance non- non-pharmacological interventions, especially group reminiscence for older adults in rural India. Explain the gaps in the present existing evidence. The next chapter will discuss the review of literature and research questions that were framed to answer some of the gaps found in the literature reviews, which led to formulating objectives and hypotheses.

CONCEPTUAL FRAME WORK

Research studies rely on a foundational framework of background knowledge to contextualize and interpret their results. Concepts are complex psychological constructs derived from experiences, and theories and models provide the conceptual context for a study. Conceptualization is the process of forming ideas that shape the research design guiding data collection. In this study, the chosen conceptual model is "Widenbach's helping arts of clinical nursing theory" by Emestine Widenbach (1964), which assesses the impact of group reminiscence on the cognitive and mental health of older adults. According to this theory, nursing practice involves identifying patient needs, providing necessary assistance, and validating actions taken to meet those needs.

1 Identification

This phase involves identifying the needs of older adults by collecting data based on inclusion criteria. Subsequently, their cognitive and depression levels and Qol were assessed using the MMSE, GDS, and WHO BREE Quality of Life scales.

II Ministration

This stage involves providing the necessary assistance to fulfil the identified needs, comprising three components: Central Purpose, Prescription, and Realities.

Central Purpose: It refers to the effective of group reminiscence in improving cognitive and mental health among older adults.

Prescription: A prescription outlines the specific actions and cognitive processes aimed at achieving the researcher's central purpose. In this case, it involves implementing group reminiscence sessions to enhance cognitive and relieve depression. These sessions encourage participants to engage in stimulating discussions and reflections on memories related to their childhood, friendships,

marriage, children, and social achievements, with each session centred on specific themes.

Realities

This study involves a Nurse Researcher (Agent) conducting a group reminiscence intervention among the elderly in a rural community (Recipient). The goal is to enhance cognition, reduce depression, and increase Qol. The intervention, spanning three months and occurring weekly, will employ various themes to trigger memory recollection, focusing on childhood, marriage, friendships, and cognitive stimulation. The study will take place in a rural health centre as the chosen framework for implementation.

III Validation

Validation refers to the collection of evidence, whether the intervention is effective or not. The validation will show the effectiveness of the intervention which will applied in the study. In this study, the older adults need the improvement in cognition, depression and QoL as a result of group reminiscence.

Summary: This chapter discussed the background of the study, the need for the study, and the challenges faced by older adults. Group reminiscence intervention was also introduced in this chapter, how it was effective in rural communities. The next chapter will discuss the review of Literature.

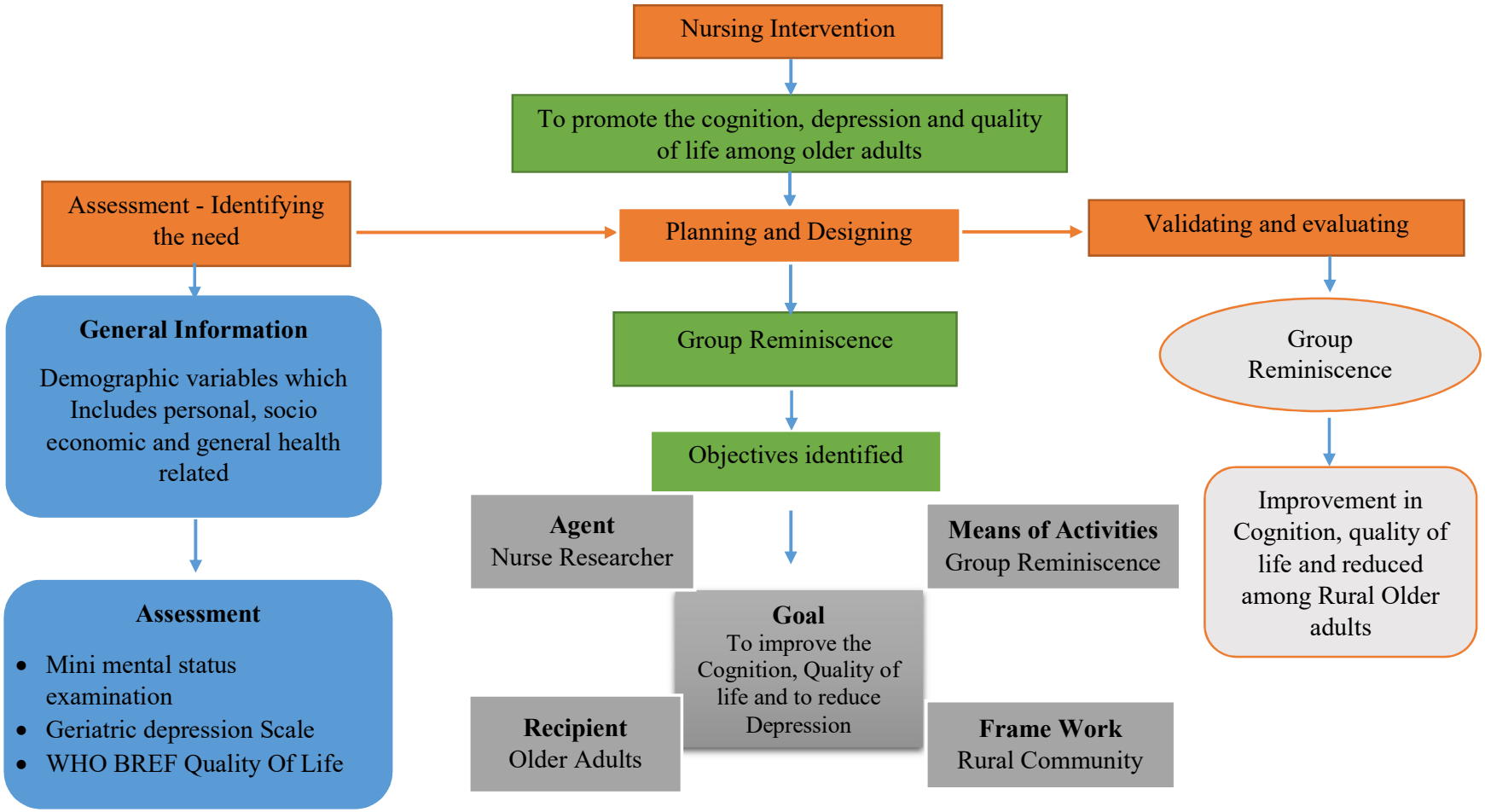


Figure 1: Modified Wiedenbach's Helping Art Clinical Nursing Theory (1964)

CHAPTER- II

REVIEW OF LITERATURE

The literature review provides a comprehensive overview of existing research in the chosen field. It serves as the foundation for the current study, identifying gaps in knowledge and inspiring new research directions. Additionally, it plays a critical role in developing evidence-based practices for healthcare professionals. By summarizing and analysing previous research, this review helps researchers contextualize their work and make sense of their findings, ultimately contributing to the advancement of knowledge in the field.

The skill of identifying and finding documents related to a research topic demands adaptability. The literature was retrieved from databases such as PubMed, Medline, CINAHL, Science Direct, Ovid, Proquest, Scopus, Springer link, IndMed and Cochrane. In addition, Google Scholar and Grey literature available in textbooks, published and unpublished dissertations, other e-resources, conference proceedings, government publications and reports were also referred to acquire additional information on the topic. Sometimes, the researcher contacted authors to widen the search strategy and obtain necessary information. A number of steps are involved in preparing a written review, as summarized in figure (2).

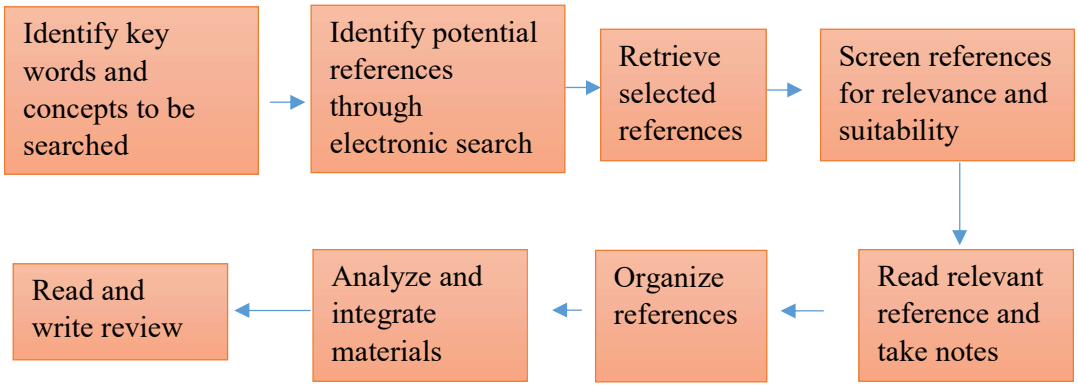


Figure 2 Flow chart of the literature review process

The researcher has attempted to focus on studies done at the international and national levels. For an in-depth understanding and clarity, the literature review was organised under the following headings.

2.1 Cognitive impairment among older adults

2.2 Depression among older adults

2.3 Quality of Life among older adults

2.4 Reminiscence on cognitive impairment, depression and Quality of Life.

2.1 Review of Literature on Prevalence of Cognitive Impairment:

A study was done to find the global prevalence estimation of cognitive impairment. This study found that global prevalence rates of cognitive impairment fluctuated from 5.1% to 41%. They planned homogenization of the meaning of cognitive impairment and the status of the standardized cut-off scores of cognitive tests to associate with different studies (Pais et al., 2020).

A Study was conducted among older adults in the year of 2016 with cross-sectional design to monitor the cognitive status using the MMSE. 10% among 1000 older adults were reported as Cognitive impaired. This prevalence was high in women age was associated with CI (OR 2.86; 95% CI: 1.19–6.90). Additionally, individuals with no schooling had a significantly higher risk (OR 8.73 CI: 1.32–57.47). These findings noted the significance of age, educational background, and functional status in relation to CI in older adults (Konda et al., 2018).

A study was conducted in Gujarat to assess geriatric cognitive dysfunction and its associated sociodemographic variables. Out of 560 participants (251 males, 309 females), 25% had Cognitive impairment recorded in Rural settings. Several sociodemographic variables were significantly associated with CI. These variables include age ≥60 years (P = 0.000), Women (P = 0.04), Rural older adults (P = 0.02),

Living status (P = 0.000), being not educated (P = 0.000), being unemployed (P = 0.000), and belonging to the lower economic class (P = 0.02) (Patel and Singh, 2018).

In a cross-sectional study conducted in Ludhiana, Punjab, India, between June and November 2011, 8.8% of older adults were recorded with cognitive impairment. Among those with cognitive impairment, 60.8% had mild impairment, 23.5% had moderate impairment, and 15.7% had severe impairment. The study identified several factors associated with cognitive impairment, including being female, older age, unmarried/widowed status, low education level, unemployment, and lower socioeconomic status (P<0.05) (Sengupta P et al., 2014).

A study was completed in Mexico to screen cognitive impairment using a door-to-door interview technique and multistage probability random sampling. MMSE was used to monitor the cognitive functions. 13.8% of the study participants were presented with cognitive impairment. Among them, women (14%) had greater compare to Men (12.6%). The study identified several factors associated with cognitive impairment, including age (>75) (OR = 4.92, 95% CI: 3.43–7.06), being not married (OR = 3.48, 95% CI: 2.39–5.08), less educational (OR = 9.06, 95% CI: 5.16–14.60), and depression (OR = 3.26, 95% CI: 2.31–4.60). These findings highlight the significance of age, marital status, educational level, and depression in relation to cognitive impairment prevalence, specifically within the GMA population. However, caution should be exercised in generalizing these results to other populations without further investigation (Ortiz et al., 2012).

2.2 Review of Literature on Prevalence of Depression:

This study examines depression among demented older adults. The study found that approximately 22% of demented participants had co-occurring depression. Among the sample, almost 88% reported receiving treatment for depression, with 75% using

antidepressants alone and 13% receiving combination therapy. Factors such as age, marital status, limits in daily activities and pain were significantly associated with the likelihood of receiving depression (Bhattacharjee et al., 2017).

A study conducted in a rural population of Haryana, India to determine the depression among the elderly. The study included 500 older adults randomly. The study found a depression prevalence of 14.4% among the elderly population. Women, chronic illness, lack of involvement in major decisions, presence of chronic illness, lack of daily activities or hobbies, and recent loss of a close relative within the past year were associated with depression (Pilanai et al., 2017).

A study was carried out in Belagavi, to identify depression and associated risk factors among elderly individuals. The study included 850 older adults, and the data collection was done through a house-survey using a predefined assessment toll that incorporated demographic details and the GDS-15. The results reported that 36.7% of the total population detected depression among older, which noted more in Women. Increasing age, marital problems, and low economic were associated with depression (Ahmed et al. 2016).

To record the depression and its relationships with sociodemographic aspects, a study was done in Visakhapatnam, Andhra Pradesh. The study found that 31.7% of 1000 older adults were suffered with depression, more in the rural (36%) compared to urban (27%). Depression was more common in women (37.5%), unmarried individuals (46%), those living alone (65%), individuals from a low economic (34%), and those who had experienced stressful life events (71%). Additionally, the study revealed a higher rate of functional impairment among individuals with depression (6.5%) (Manjubhashini et al., 2016).

To report the depression incidence, research was conducted at Chennai. A total of 173 participants were included, with 90 from an urban and 83 from a rural background. The study found that 41% of urban and 46% of rural recorded severe depression among older adults with the help of GDS. In the rural community, factors significantly associated with depression included female sex, low education, no time to spend with children and dietary habits were significantly associated with geriatric depression (Arumugam B et al. 2013).

A study was done in Karimnagar to record geriatric depression and its associated factors in the rural community. A sociodemographic and PHQ-9 opted to collect the various risk factors for depression from 190 participants. Among them, 44.7% of the participants noted that they were in depression. Additionally, 33.2% of the participants scored for moderate to severe depression. Significant associations were observed between depression and factors such as economic status ($p = 0.018$) and poor health status ($p = 0.011$) (Bodhre et al., 2013).

A study led in Chandragiri among 400 individuals aged over 60 years residing. The depression was recorded with the help of the GDS-Shorter version. The study revealed an overall prevalence of depression of 47.0%, with higher rates observed among females (56.5%), illiterates (58.9%), individuals aged over 80 years (54.3%), those from lower socioeconomic classes and below the poverty line (72.7%), individuals living alone (87.3%), and those who were physically (80.0%) and financially (63.3%) dependent. Women had a greater mean value in depression (6.80) compared to the overall mean score (6.16). Depression was significantly associated with gender, marital status, education, living arrangement, and socioeconomic status (Kumar et al., 2013).

An observational study was conducted in Tirupathi from April 2009 to September 2009 to measure the presence of depression and its related aspects among 400 older adults. 47% of old adults were documented with depressive symptoms, which was higher in Living alone (87.3%), low financial status (86.1%), partially dependent (63.3%), no education (59%), women (56.6%), and aged above 80 years (54.3%). (Swarnalatha N, 2013).

In the village of Halsoor, Karnataka, a survey was conducted to measure geriatric depression with the help of the HDR Scale. All 90 households were visited, and a total of 70 participants aged over 65 were interviewed. The study found a prevalence of depression of 14.3% in the rural population, which is recorded more in the Women (16.2%). The lower depression rate in rural areas could be attributed to factors such as the joint family type, which is common in rural areas and may provide greater social support (Abhishek et al., 2013).

A study was done on 800 rural older adults in Tamil Nadu state. Depression was recorded by using short version of GDS. The depression was found to be 47.0%. Among specific subgroups, higher rates of depression were observed among females (56.5%), illiterates (58.9%), individuals aged 80 years and above (54.3%), those from low socio-economic (72.7%), single (87.3%), those with physical dependence (80.0%), and those with financial dependence (63.3%). Women revealed a greater mean depression score (6.80) compared to the overall depression mean score (6.16) (Reddy et al., 2012).

Descriptive research was conducted in Maval Taluka, Maharashtra, to measure geriatric depression in six villages under the rural health centre. A house-to-house survey was conducted with the GDS-Short Form, involving 180 older adults. Among the participants, 74 individuals (41.1%) scored five or higher on the scale, indicating a

suggestive score for depression. Furthermore, 18.9% scored higher than 10 (definite depression). Age and stress were related to depression (Deshpande SS et al., 2011).

A descriptive survey was conducted to investigate geriatric depressive mood and it's associated. The 295 participants were included in Korean. The incidence of geriatric depression was found to be 63%, with 21% having severe depression. The mean value of the depression was 6.21, which was more in women than men. Health status accounted for 17.3% of Korean elderly individuals (Kim et al., 2009).

In Karachi, Pakistan, a study was designed to explore depression and the role of family among the elderly. The study utilized GDS to screen geriatric depression. The majority of participants (60-70%) were aged 65 to 74 years, and 78% were male. 19.8% of the participants suffered from depression significantly associated with the nuclear family, women, widowers or not married, low education and unemployment. (Taqui et al., 2007).

A study conducted in India examined psychiatric morbidity among geriatric individuals seeking psychiatric services. The findings revealed that depressive disorders were the most prevalent among the various disorders. Many patients had co-existing physical illnesses, with hypertension. While family support was adequate for most patients, objective social support was moderate and perceived social support was poor. Interestingly, the study also found that individuals residing in old age homes reported feeling better compared to those living with their children's families (Tiple et al., 2006).

A survey was conducted in Karakulam village, Trivandrum district. The data collection took place from January to March, 2004. Through systematic sampling, 259 older adults were selected. The study found a prevalence of depressive symptoms among the elderly population at 24.7%. Elderly individuals who were single had nearly

two times the risk of experiencing depressive symptoms compared to those living with a spouse. The risk was 3.5 times higher in people who were not working compared to those engaging in any kind of work, and Illiterate people were 3.2 times more literate (Aravind P. 2004).

In Taiwan, a study was conducted on depression in old age to examine the prevalence of depressive disorders and explore their socio-demographic correlates and relationship with life events. A randomized sample of 1500 participants aged 65 and over from three communities was included. The results revealed a prevalence of 5.9% who were diagnosed with major depression. The study identified that widows with a low educational level and individuals with physical illnesses were at high risk of developing depressive disorders (Chong et al., 2001).

A study conducted in Dharwad city investigated depression among the elderly and its correlates. The sample consisted of 220 individuals aged between 50-70. The results specified that a majority of respondents had mild depression. The study revealed health status, economic status, social status, and family background had a negative and significant relationship with depression. However, there was a positive association between religious movement and depression among the elderly (Patil et al., 2001).

The research was done in America to examine geriatric depression in the elderly. Participants were assessed for depressive symptoms. Of the 87 patients in the final study group, 50 had major depression, and 37 did not. 62.1% had mild, 31% moderate, and 6.9% severe depression (Koenig et al., 1998).

2.3 Quality of Life among older adults

QoL is one of the pointers used in measuring and estimating older adults' health and well-being. It is a comprehensive method to cover the individual's physical, mental, social relationships and environment. It is nothing but an individual's observations of

their life situation in the framework they live in. Quality of life should not decline due to ageing (Shah et al., 2017). Qol of individuals is becoming even more relevant with the demographic shift happening toward an ageing society. A good quality of life indicates that the individual should be in a healthy ageing process. It could mean that people perceive good mental and physical functions and active engagement with life. Many studies have used different questionnaires, and they have shown poor quality of life. Compared to urban communities, rural older adults have lower quality of life irrespective of age, gender, education and economic. A few studies were discussed below.

Lalitha Krishnappa et al 2020 conducted a study among 977 elderly. The study reported that rural older adults have a poor quality of life compared to urban individuals. Mean QOL scores (SD) in the physical, psychological, social relationship and environmental domains were recorded in both rural and urban communities. The psychological domain had a poor quality of life in rural areas, whereas the social relationships domain had a good quality of life in urban.

Uddin et al 2017 reported that most of the subjects had a moderate score of QoL. Quality of life was negatively correlated with sleep, depression and activity of daily living, whereas social support was positively correlated. The study recommended that the implementation of non-pharmacological therapies can significantly improve the QoL.

Ganesh Kumar et al 2014 carried out a study to study the QoL among 300 older adults. The study has shown that the low QoL was associated with no schooling ($p=0.004$), nuclear family ($P=0.039$), and not with partner ($P=0.000$).

2.4 Review of Literature on Group Reminiscence on Cognition

A study was carried out to investigate the effect of reminiscence on depression, cognition and quality of life among older adults. The selection of participants and administration of the intervention are done in a nursing home. Sixty older adults were included and allocated into the experimental group (30) and control group (30). The assessment was done before and after the intervention. A reminiscence intervention protocol was developed, which lasted for eight weeks. Each session took one hour. Materials to trigger the memory were used. After the eight-week intervention, the experimental group improved significantly in Cognition ($Z= -2.7$, $P< 0.001$), depression ($Z=1.657$, $p< 0.20$) and quality of life ($Z=-7.78$, $p< 0.001$). This study concluded reminiscence therapy should be applied as regular and routine care to improve the health of older adults (Lok et al., 2018).

The research was carried out with a single-blind design to observe the benefits of reminiscence on cognition and mood among older adults. Forty-one participants were randomly allotted to either the experimental or control group. The experimental group received a five-week individual reminiscence protocol. The study found that older adults who received the intervention showed improvements in cognition ($Z = 2.305$, $p < 0.05$) (Lopes et al., 2016).

The research was conducted to inspect the outcome of reminiscence on the cognitive status of individuals in Turkey. Reminiscence therapy was administered in 12 weekly sessions, lasting 30 to 45 minutes each, involving a conversation with one participant per week. The reminiscence group showed statistically significant changes in mean MMSE scores (15.65 ± 2.49 to 18.54 ± 3.36) compared to the control group (14.16 ± 2.14 to 14.35 ± 1.99) after the reminiscence therapy ($F = 22.418$, $P < .001$). The study suggested that regular applications focusing on remembering of the past life

positively affect the cognitive process in elderly individuals, as conscious effort and facilitated reminiscence contribute to improve cognitive functioning (Asiret and Kapucu, 2016).

A quasi-experimental method was developed to investigate the effects of reminiscence intervention on memory among elderly women. Convenient sampling was used to recruit 78 participants from Korea. The experimental group (40 subjects) received 1-hour weekly sessions of individual reminiscence therapy for four weeks. The results showed that reminiscence had a positive effect on memory performance (P=0.001) in older women living alone (Sok 2015).

A study was developed to find the outcome of group reminiscence on cognition. A total of 100 elderly participants from western Iran were recruited and allotted into experimental and control groups with balanced block randomization. These participants were randomly allotted to either the experimental or control group with the help of balanced block randomization. The experimental group participated in an eight-week group reminiscence, and results showed improvement at two months (25.02±3.67, P=0.003) and three months (25.04±3.72, P=0.001) mean score of MMSE compared to baseline. However, in the third-month post-intervention, there was no significant increase in cognitive status (24.72±3.66, P=1). The results recommend that the applied intervention had a beneficial effect on cognitive functioning in the short term. Further studies on cognitive interventions for elderly individuals have also supported the effectiveness of such interventions (Jahanbin et al., 2014).

A research was designed to calculate the effects of an intergenerational reminiscence program on cognition. Elderly participants were assessed cognition before and within two weeks after completing the program. The subjects participated in 15 reminiscence topics covering positive experiences during adolescence and

adulthood. The results showed significant improvements in Cognition (mean change pre-test18.47 ± 3.30 and post-test19.05 ± 4.03) among the elderly participants after the program (Chung, 2009).

A study was done to assess the reminiscence intervention in preventing cognitive impairment progression among elderly individuals. The study was conducted in five elderly care facilities in southern Taiwan from January 2005 to May 2006. A total of 102 elderly participants were recruited into the experimental group and control group. The participants in the experimental group demonstrated an improvement in MMSE scores ($p = 0.015$). The findings highlight the positive impact of participation in reminiscence activities for individuals with dementia, emphasizing the need for a planned care program for long-term care requirements (Wang, 2007).

The research was carried out to measure the uses of reminiscence in the elderly. The study included 24 participants with AD and 36 with VD, and the outcome measured was cognitive function. Participants were assigned to the experimental group and control group randomly. The experimental group received reminiscence therapy for eight weeks. The results showed that the experimental group had improved cognitive function ($P=0.010$). The study recommended that continued therapy may be required to continue the result over time, especially for older adults (Tadaka & Kanagawa 2007).

A cross-over study assessed the reality orientation and reminiscence therapy on cognition among older adults. Fifteen participants were divided into three groups: reality orientation (5), reminiscence therapy (5) and control group (5). Results showed that reminiscence and reality orientation groups showed improvement in cognition ($P<0.0413$) and behavioural measures compared to group C. The study mentioned that both reality orientation and reminiscence groups could be active in assisting supervisors in getting to know confused residents. It also appears deceptive the high level of

presence, participation and promises that both groups can be enjoyable and stimulating for residents and staff (Baines et al., 1987).

2.4.1 Review of Literature of Group Reminiscence on Depression

A study was accompanied by two government-funded in Taiwan over a period of 3 months. Purposive sampling was used, and 24 participants were recruited in this study (12 in each group). The experimental participants received reminiscence sessions for eight weeks, lasting 60 minutes each, and the comparison group received institutional care. The results showed that the experimental group had a reduction in depression scores (pretest: 13.0, posttest: 8.7, $t = -2.40$, $p = .036$; Cohen's $d = -2.57$) (Teng et al., 2020).

Reminiscence therapy for cognition among older adults research was carried out among 90 participants. The intervention group was administered 12 weeks of interventional therapy, and routine care was offered to the control group. The outcomes showed that the participants improved cognitive functions at 12 weeks (P=0.41) followed by 24 weeks (P=0.000) in the intervention group. These results recommended that this non-pharmacological therapy is effective in relieving geriatric depression. (Li et al., 2019).

A study was investigated among the elderly with depression. A total of 60 nursing home residents were recruited; among them, 29 participants in the experimental and 31 participants in the controlled group were allocated randomly. The therapy involved an 8-week protocol with 45-minute sessions focusing on different themes. The outcome measures included depression and cognitive impairment. The subjects were reported that they relieved from depression, and that was statistically indicated (-2.48, $p = 0.005$). Further research should explore the potential of individual reminiscence therapy within a person-centred care approach for refining care in hospitals for older adults (Van Bogaert et al., 2016).

Group Reminiscence therapy as a nursing intervention was conducted to find the improvement in geriatric depression. A total of 21 male veterans were screened and equally distributed recruited. A 4-week intervention was developed for experimental. Participants in the experimental group relived from depression at post-test (p=0.001), 3-month (0.015) and 6-month (0.022) follow-up compared to control group participants (Chueh, K. H., & Chang, T. Y., 2014).

A meta-analysis was done on geriatric depressed people to estimate the effectiveness of group reminiscence. The researchers systematically reviewed published and unpublished randomized controlled trials. Multiple electronic databases were sought to recognise related studies. The initial search strategy yielded 531 articles. Among them, ten were recruited for meta-analysis. The results specified that group reminiscence had a positive effect in alleviating depression in the intervention group (CI 95% = -6.46 to -2.32; $p < 0.0001$). However, the benefits of group reminiscence therapy seemed to diminish after six months of the intervention (95% CI = -11.26 to -1.54; $p = 0.14$). The authors of the study suggested that high-quality, large-term effects are necessary to further validate these findings. The limited duration of the observed benefits highlights the importance of exploring long-term effects and the need for more robust evidence in this field (Song et al. 2014).

A single-blind study investigated the effectiveness of reminiscence intervention on depressed institutionalized elderly. Participants included 34 older adults from two retirement homes aged 65 to 92 years. The intervention lasted eight weeks with one-hour sessions. Results revealed that depression was decreased statistically in the treatment group ($F (1, 27) = 5.40$, $p = .028$). The study concluded that key priorities should focus on creating adaptive community-based environments and developing

interventions to enhance well-being and quality of life for older adults (Meléndez et al., 2013).

A longitudinal design was carried out to investigate the reminiscence benefits on depressive symptoms. The study involved 93 geriatrics from Taiwan. A 24-week intervention protocol was implemented for the interventional group. The intervention group participants ($p = 0.02$) were relieved from depression compared to the control participants ($p = 0.22$). The study concluded that reminiscence intervention has positive changes in geriatric depression, and healthcare staff should address geriatric issues accordingly (Su et al., 2012).

An experimental study inspected the success of reminiscence on geriatric depression. Eight communities were randomly selected, and 125 community-dwelling elderly participants were recruited. The participants in the experimental group participated in the reminiscence therapy program, and the study found that after the implementation of the six-week group reminiscence therapy, there was a significant decrease in depression scores in the experimental group $p < 0.01$). The study concluded that group reminiscence therapy has positive effects on relieving depressive symptoms in the short term for community-dwelling elderly and is more effective than health education alone (Zhou et al., 2012).

A pre-post control group experimental design was done to examine the impact of reminiscence group therapy (RGT) on reducing depression. Sixty-one residents were allotted to two parallel groups. The residents in the experimental group received a 12-session RGT program, with each session lasting 40-50 minutes per week. The results reported that the residents in the intervention group depression symptoms dropped significantly ($Z = -2.99$, $p < 0.05$) (Hsieh et al., 2010).

Experimental research was done on 92 subjects. Experimental and control groups were formed with random method. The participants in the experimental group completed two months of intervention. The results have shown that the positive short-term effects were observed in depression compared to the comparison group. The post-test and follow-up test results showed significant in depression ($z=7.09$, $p<0.0001$; $z=7.82$, $p<0.0001$), psychological well-being ($z=10.25$, $p<0.0001$; $Z=10.63$, $p<0.0001$), and loneliness ($z=27.26$, $p<0.0001$; $z=22.75$, $p<0.0001$). Reminiscence therapy improved socialization, fostered a sense of accomplishment, and helped alleviate depression among the participants (Chiang et al 2010).

In southern Taiwan, research was carried out in four long-term care services. The study developed eight weekly group reminiscence sessions lasting 60 minutes over a two-month period for experimental participants. The study found that the experimental group was relieved from depression with the help of Intervention, and it was statistically significant ($F(1, 43) = 11.41$, $p = .002$) with a high effect size of 0.21. Group reminiscence was identified as a therapeutic treatment for geriatric depression, which can be implemented by nursing personnel. It is a cost-effective approach to enhancing the psychosocial well-being of institutionalized older individuals. Further research on a larger sample, encompassing diverse diseases and cultural groups, is recommended (Hsu and Wang, 2009).

A meta-analysis was conducted on all RCTs before 2001 to inspect the outcome of reminiscence therapy on geriatric depression. The author extracted the data from electronic data, manual search and website. Quality assessment of the selected studies were reported with Chalmers' scale. This study reported that depression levels were decreased in participants from the experimental group receiving reminiscence therapy

(PSMD= –0.90; 95% CI, –1.49 to –0.32). The review concluded that group reminiscence is good for older adults (Chin, A. M. 2007).

A study was done to investigate the impact of reminiscence intervention among nursing home residents. Twenty-four older adults were recruited from two wards, one as experimental and another as control. Participants attended reminiscence group therapy for nine weeks. Results reported that the depression symptoms were improved in the experimental group. Additionally, the reminiscence groups fostered social interaction and provided support for participants in the nursing home setting (Chao et al., 2006).

A study was developed to know the benefits of reminiscence intervention. Forty-eight older adults who were staying in the home care were recruited. The experimental group had weekly sessions lasting 30 to 45 minutes over four months. Results indicated that a significant decrease in depression ($t = 2.027$, $p < 0.05$) (Wang, 2005).

A pilot study was carried out to evaluate the benefits of reminiscence intervention on depression among seventy-nine elderly participants. The intervention consisted of 12 group sessions, each lasting 2.5 hours. Following the application of the protocol, subjects reported improvement in depression ($t = 3.86$, $p < 0.0001$). The mean score decreased from 23.8 to 20.4, indicating a reduction of 3.4 points. The study also identified several potential ways to enhance the effectiveness of the intervention (Bohlmeijer et al., 2005)

Comparative research was conducted to investigate the effectiveness of reminiscence therapy on geriatric depression in nursing home care. Forty-eight participants completed the study. Following reminiscence therapy, statistically significant changes were found between the groups ($t = 5.96$, $p < .001$ within the groups

(t = 2.83, p = 0.009). It is crucial to implement approaches that enhance the lives of older adults in long-term care, and reminiscence therapy offers a method to promote successful Ageing (Wang, 2004).

Research was conducted on demented elderly to find the benefits of reminiscence intervention. The groups were formed: reminiscence (9), supportive (9) and control group (9). The reminiscence groups received intervention for five weeks, support groups received present and future events and problems and the third group served as no treatment. Results shown that the mean of the reminiscence group's MMSE (Pre-10.7; post-12.6) and BDI (Pre-8.6; post-4.5) improved at post-test. This programme should be designed and practised in the long term (Goldwasser et al., 1987).

2.4.2 Review of Literature of Group Reminiscence on Quality of Life

Experimental research was carried out to examine the benefits of reminiscence on QoL in long-term care centres in the Czech Republic. The participants were allocated into reminiscence (n = 59) and control (n = 57) groups. The intervention group received reminiscence therapy over eight weeks. The sessions lasted for 40-60 minutes each. Results shown that the participants revealed QoL domains such as physical (P< 0.001), mental (P< 0.001), environment (P=0.044), QoL (P=0.023), social activities (P<0.05) were improved (Siverová and Bužgová, 2018).

A study designed to investigate the effects of reminiscence on memory and quality of life in older women living alone. Seventy-eight participants were recruited from Korea. The experimental group (40 subjects) received 1-hour weekly sessions of individual reminiscence therapy for four weeks. Various measures were used to assess general characteristics and QoL. The results showed that reminiscence therapy had improved the quality of life ($t = -20.33$, $P < 0.001$) in older women living alone (Sok, 2015).

A quasi-experimental design was carried out to examine the uses of reminiscence on QoL. A total of 19 participants with dementia were included in the study after accounting for dropouts. The Life Satisfaction Index-A was used to measure quality of life. The study took place in a mental health centre in Gyeonggi Province from February to June 2013, with the program lasting for two months. Pre- and post-test questionnaires were administered, and reminiscence sessions were conducted for a total of eight sessions, lasting 150 minutes each. Results reported a statistically significant improvement from pretest to posttest scores of QoL (12.05±7.17; 14.32±6.21; $Z=2.73$, $p=.006$), indicating that the intervention is an effective intervention for individuals with dementia, according to the study (Jo and Song, 2015)

Interventional research was carried out to identify the influence of reminiscence on the Qol of 41 patients in a care facility. Participants from the experimental group attended the above-mentioned intervention once for 6-8 weeks, focusing on storytelling. Results shown that reminiscence had an improvement in quality of life. It was concluded that reminiscence is a cost-effective non-pharmacological intervention, and implementing reminiscence work in healthcare facilities providing elderly care is recommended as a best practice (Siverová and Bužgová, 2014).

A study was conducted during 2018-2019 using a pre-and post-one group design. A non-probability sampling technique was employed, resulting in 43 recruited participants. The participants' health-related QoL was assessed before and after the intervention. Eight reminiscence sessions were implemented, where participants shared their memories. Three months after the intervention, significant improvements were observed in domains of the quality of Life. However, no significant changes were found in social functioning, vitality, and pain. The study suggests that reminiscence can be an

effective care option to improve the quality of life for individuals living in long-term care settings (Koushal et al,. 2013).

2.4.3 Reminiscence therapy of Cognitive functions, depression and quality of life

A study was carried out to investigate the effects of reminiscence therapy in individuals with dementia. This meta-analysis included 23 controlled trials with 1763 participants. Regarding the effect of reminiscence on geriatric depression, significant heterogeneity was observed (Cochran's Q = 91.37, $p < 0.001$; $I^2 = 84\%$). Consequently, a random-effects model was employed. The overall mean effect size for depression was -0.541 ($Z = -3.730$, $p < 0.001$), indicating a substantial reduction in depressive symptoms following reminiscence therapy. Furthermore, the quality-of-life effect size was 0.376 ($Z = 2.452$, $p = 0.014$), suggesting a significant improvement in QoL through reminiscence therapy. Based on these findings, it can be concluded that therapy has a moderate effect on reducing depressive symptoms and enhancing QoL. As an alternative to antipsychotic medications, which may have adverse side effects and be costly, reminiscence therapy holds promise as a widely applicable intervention for addressing depression in this population (Park et al., 2019).

A study was conducted to know the impact of reminiscence therapy (RT) on cognition, depression, and quality of life in the elderly. Meta-analyses were performed using data from 16 studies involving 1749 participants. Results reported small benefits of reminiscence on cognition (95% CI 0.00 to 0.23). However, no difference was observed in the long-term effect on cognition. The quality of evidence for this finding at longer-term follow-up was low (1.8 points). For depression, reminiscence therapy demonstrated a likely small use on geriatric depression, though the statistical significance of this finding remains unclear (SMD -0.41, 95% CI -0.76 to -0.06). Importantly, no side effects were identified from the application of reminiscence

therapy in individuals with dementia. The effects of reminiscence interventions exhibited inconsistency and often had small effect sizes, which varied across different settings and modalities. Nevertheless, RT demonstrated positive changes in quality of life, cognition, communication, and mood in individuals with dementia, the therapy offers some benefits across various domains and may be considered a valuable intervention for individuals with dementia (Woods et al, 2018).

A study was done with the help of Meta-analysis design to see the benefits of reminiscence therapy. Sixteen articles were reviewed in this meta-analysis. Most of the studies in the reviews were quasi-experimental studies without random assignment. Only a few studies have done RCT with follow-up. The results of the review study demonstrated numerous benefits of the intervention in the elderly. These benefits included progresses in cognition and depressive symptoms. Based on the findings, the authors assert that reminiscence therapy is an effective approach to promoting mental health in geriatrics (Yen and Lin, 2018).

A systematic review was conducted to evaluate the effects of group psychotherapy on geriatric depression in the elderly, comparing it with alternative treatments or no treatment. The findings of the review reported that this was a beneficial intervention. However, the long-term effects were uncertain due to limited evidence. The studies encompassed various settings, protocols, and participant characteristics, demonstrating the effectiveness of group psychotherapy in several psychological domains. The review highlights the potential benefits of group interventions, particularly reminiscence therapy, for reducing geriatric depression across diverse contexts and populations (Tavares & Barbosa, 2018).

The study was carried out to gather evidence regarding the progress of cognition and depression in the elderly through reminiscence therapy. Randomized controlled

trials (RCTs) with dementia were included. Different Electronic databases were searched from up to 2014, and eligible articles were selected for full-text review and evaluation. A total of 12 Studies were included in this meta-analysis. The overall mean effect size was statistically significant towards cognition and depression (P<0.01). In summary, the study said reminiscence therapy had a small effect on cognition and a moderate effect on depression (Huang et al., 2015).

A meta-analysis was done with 128 from different databases. The largest improvements were found in geriatric depression (95% CI =0.16 to 0.51, Z=3.77, Q=64.29) and cognitive performance (95% CI=0.11 to 0.34, Z=3.83, Q=32.90). At follow-up, intervention effects remained significant for geriatric depression (g=0.50, Z=3.76, Q=86.85) and cognitive performance (g=0.18, Z=2.05, Q=86.34). Overall, reminiscence had a positive impact on a wide range of outcomes (Pinquart and Forstmeier, 2012).

A study was carried out with a systematic review on geriatric depression to know the results of the reminiscence. Nine articles were studied and indicated that the reminiscence therapy groups had significantly lower depression at the end of the study. Based on these findings, reminiscence therapy may be considered as potentially effective in decreasing depression in the elderly (Hsieh, H. F., & Wang, J. J. 2003).

Gaps identified in the literature

- Older adults with cognitive impairment and depression were major leading disorders, especially in rural communities. Holistic nursing interventions are to be developed in this research area.
- Since older adults' have undergone treatment for cognitive impairment and depression, continued care by a nurse practitioner to enhance the quality of care need to be tested.

- There are few studies on Reminiscence therapy intervention, but there are limited in developing countries.
- Divergence in studies has been distinguished in different areas like defining population, settings, methodology, outcome variables and statistical analysis and reporting.
- As non-pharmacological interventions are conducted in different settings, studies need to be conducted to test the usefulness of these interventions in rural community settings where treatment is a major problem.
- Limited published literature from developing countries, especially from India, where the number of geriatric mental health problems are increasing per year.
- Rural community studies, such as interventional studies, lack in this field especially in India.
- Lack of Public Health Mental Health Programmes
- Stigma and a lack of awareness

Research questions were framed to answer some of the gaps found in literature reviews, which led to the formulation of objectives and hypothesis.

The present study addresses the following research questions

1. Do older adults experience cognitive impairment and depression?
2. Does the Group Reminiscence affect Cognitive functions?
3. Are older adults relieved from Depression after Group Reminiscence?
4. Does the Quality of life of older adults improve after practising group reminiscence?

The objectives of the study are

1. To study the cognitive functions among older adults
2. To measure the depression among older adults
3. To assess the quality of life among older adults
4. To develop and evaluate the effectiveness of group reminiscence on cognitive functions, depression and QoL among older adults

The present study was initiated with the following hypothesis

1. There will be a positive effect of group reminiscence and cognition.
2. There will be a positive effect of group reminiscence and Geriatric depression
3. There will be a significant difference between pre- post in experimental group related to quality of life.

Summary:

This chapter dealt with research literature related to the problem of the present study. The literature search was presented under objective wise on group reminiscence intervention. It helped the researcher to identify gap in literature and to design and develop nurse navigator programme for the care of older adults. As there were no studies reported from India, the researcher planned the present study to provide a foundation to create evidence on group reminiscence.

CHAPTER-III

METHODOLOGY

The methodology refers to the systematic framework and techniques employed in conducting research. It encompasses the entire process, from defining research objectives and formulating hypotheses to data collection, analysis, and drawing conclusions. It serves as the analytical and scientific approach to address research problems effectively. The present study used the following guidelines for designing and reporting its methodology: CONSORT 2010 Statement and CTRI.

3.1 RESEARCH APPROACH

It indicates that the primary technique used for conducting the research. The choice of method depends on the nature of the problem and the purpose of the study (LoBiondo-Wood, Haber, Berry, & Yost, 2013). The present study was conducted with a quantitative research method.

Quantitative research usually proceeds from selecting a broad problem area to developing specific questions that are amenable to empirical inquiry. The early step in quantitative research usually involves events with a strong theoretical component. These activities involve understanding, abstracting, theorizing, and studying concepts with guides. Nurse researchers must pay close attention to substantive issues, clinical issues and methodological issues. The current research was targeted to evaluate the efficacy of group reminiscence on cognitive function, depression and Quality of life among older adults. Thus, to achieve the objectives of the study, a quantitative approach was considered. Figure. 3 represents the research methodology used in this study.

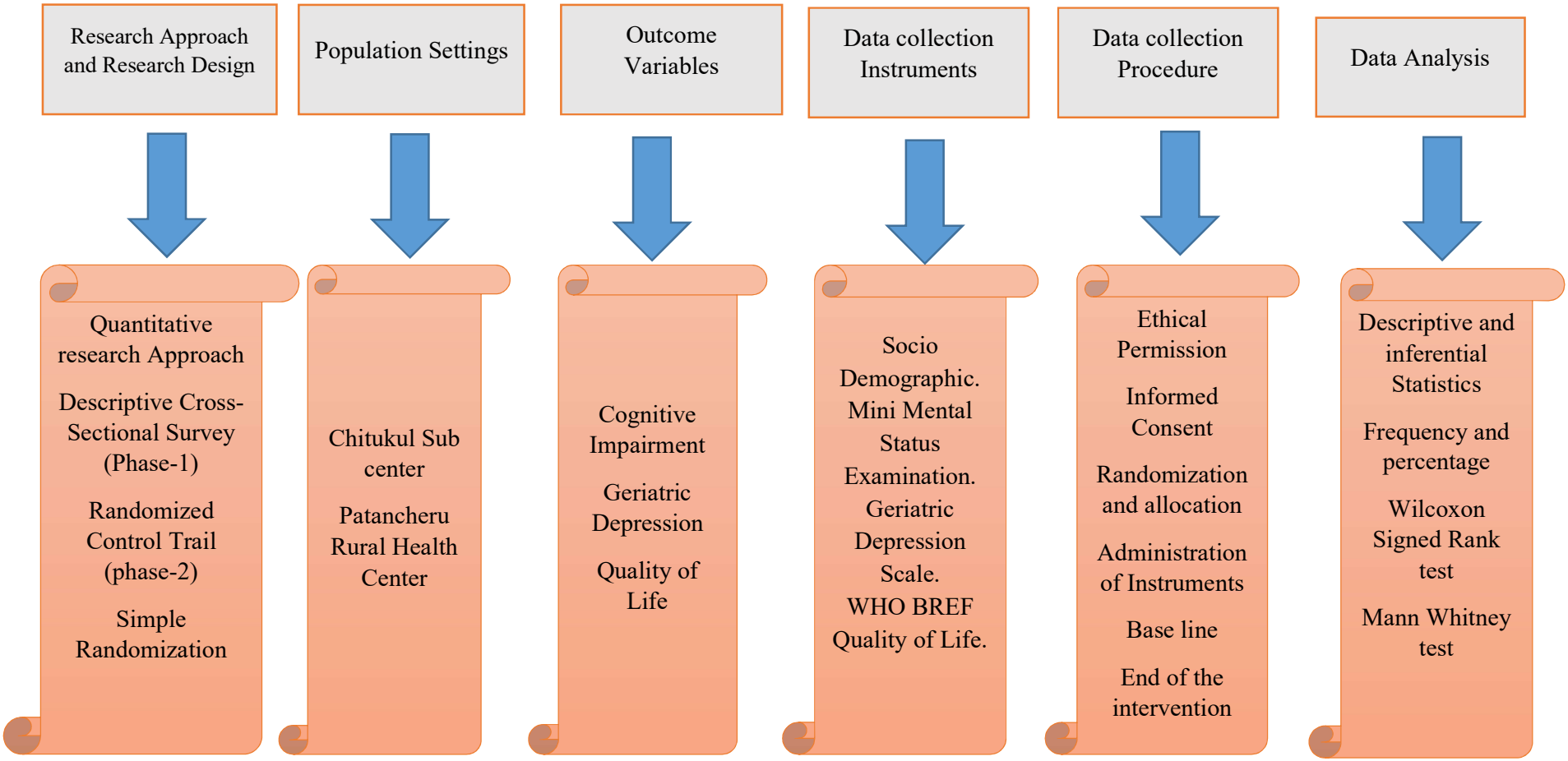


Fig. 3 Summary of research methodology used in the present study

3.2 Phase One- Assessment Phase

3.2.1 Research Design

The research design is the complete plan for obtaining an answer to the questions being studied and handling some of the difficulties encountered during the research process. In quantitative studies, research design tends to be highly structured, with tight control over the extraneous variables. The research design is essentially the architectural backbone of the study. Research designs are comprehensive plans, from broad assumptions to precise data collection and analysis methods (Creswell, 2014). The study was divided into two phases: phase one - Assessment phase and Phase two - Intervention phase. The design for phase one was a descriptive cross-sectional survey design to screen cognitive functions, geriatric depression and Quality of life. The assessment phase is a descriptive cross-sectional survey, where participants were recruited and screened for the study variables, and Phase two included the development and evaluation of the intervention in the same rural area based on the inclusive criteria. The phase-wise research design details are given below in Table 2.

3.2.2 Setting and Population:

According to Polit and Beck (2008), the setting denotes the specific area where data collection occurs in the study. The setting of the study was selected in the chitukul sub-centre, which comes under Patancheru Rural Health Centre, Sangareddy District, Telangana state, India. The target population of the study were older adults 60 years and above, both men and women.

The study was undertaken in the rural community under the purview of Patancheru Rural Health Center (RHC), Sangareddy District, which was selected through purposive sampling after the situational analysis. Under Patancheru RHC, Chitukul village was selected randomly for the study. Chitkul village is 35 Kilometers from

Hyderabad and 25 Km away from Sangareddy, and the village does not have hospitals such as super speciality, especially psychological clinics or psychiatric hospitals. There are 6000 population with 1200 houses recorded by the ASHA workers. Among them, many were from low socio-economic backgrounds. The map showing below is the area or site of the study location.

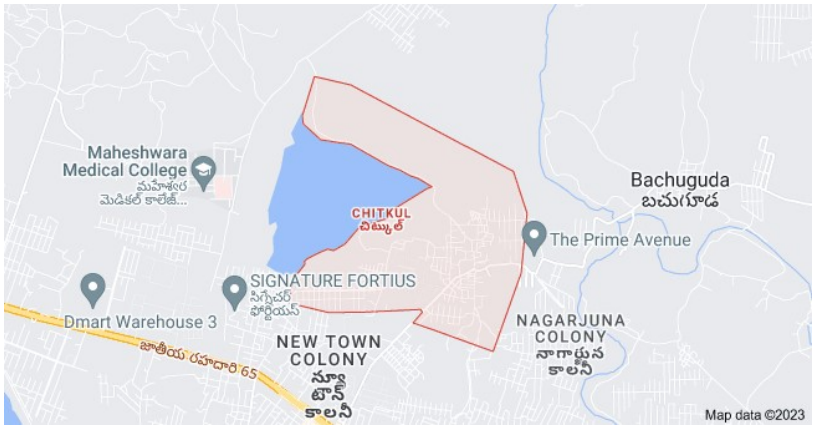


Table 2 Outline of Methods

Objective	**Method**	**Measures**
To assess the Cognitive functions	Cross-sectional-observational study design	The mini-Mental Status tool was used to screen the cognition among older adults.
To measure the Depression		The geriatric depression scale was used to measure depression in older adults.
To study the Quality of Life		World Health Organization BREF quality of life scale was used to assess the quality of life among older adults. A higher score indicated a good quality of life.
Evaluate the effectiveness of Group Reminiscence.	Randomized Controlled trail	Mild Cognitive Impairment and Depression participants were included in this phase. A developed protocol was implemented on selected older adults to enhance cognitive functions, quality of life and, decrease depression symptoms and improve social wellbeing.

3.2.3 Sample and Sample Size

According to Polit and Beck (2008), "sample is a small proportion of the population selected for observation and analysis. Sampling refers to the process of choosing a portion of the population to characterise the entire population." Sampling allows valid generalizations from a smaller population subset. Our study focuses on older village residents meeting inclusion criteria for a period of six months or more. We utilized a simple random sample method.

3.2.4 Sample size:

The sample frame and size were determined using a population proportion of 0.09 for older adults in Telangana, which has a population of 35 million (as per the Statistical Yearbook of 2017). This calculation was conducted with a 95% confidence interval.

$$\text{Sample Size} = \frac{Z^2 * p\,(1-p)/e^2}{1+\left(\frac{Z^2 * p\,(1-p)}{e^2 N}\right)}$$

Z= Based on Confidence interval (95%)
P= Population proportion.
e= Margin error (0.05)
N= Population size

$$\frac{1.96^2 * 0.09(1-0.09)/0.05^2}{1+\left(\frac{1.96^2 * 0.09(1-0.09)}{0.05^2 * 35193978}\right)} = \mathbf{126+4=130}$$

3.2.5 Ethical Consideration

This study was approved by the institutional ethics committee from the University of Hyderabad (UH/IEC/2021/34). Participants provided informed, written consent and strict confidentiality was upheld during the study. Thus, ethical issues are ensured in this study.

3.2.6 Data Collection Tools and Description

Data collection tools are a device to gather data. It is a formal written document used to collect and record information. As the study aimed at the effectiveness of reminiscence therapy among research participants, the following data collection tools were used.

1. Selected Demographic variables
2. Mini-Mental State Examination
3. Geriatric Depression Scale
4. WHO BREF Quality of Life

1 Selected demographic variable Performa

The Demographic variables were constructed to collect information from the older adults. It consists of age, gender, religion, education, marital status, type of family, financial status, Frequency of communication by Family members, how you would describe your current health, and how you would describe your family and social support and leisure time activity.

2 Mini-Mental State Examination (MMSE)

Examination of the mental state is essential in evaluating the cognitive levels of the elderly. In the past decade, the use of cognitive screening tests has surged. Among numerous options, the Mini-Mental State Examination stands out (Folstein et al., 1975). Cognitive screening is the first step in detecting various types of dementias and other neuro-psychiatric syndromes. Early detection is the best way to treat dementia and to plan healthcare. The test comprises 30 questions assessing six mental abilities: orientation, registration, attention, short-term memory, language, and comprehension. Scoring interpretation: 24-30 points indicate no cognitive impairment, 18-23 points

suggest mild cognitive impairment and 0-17 points indicate severe cognitive impairment.

3 Geriatric depression scale (SF)

Depression is extremely dominant among older individuals, associated with diminished functioning, reduced well-being, and increased mortality (Wellset al., 1989; Rovner, 1993; Beekmanet al., 2002). The Geriatric Depression Scale (SF), developed by Yesavage in 1983, is a widely used screening tool for identifying depression symptoms in the elderly. This brief questionnaire, taking 5 to 7 minutes, involves respondents indicating "yes" or "no" regarding their feelings over the past two weeks and is particularly useful for cognitively impaired individuals. It's suitable for various elderly population, including those who are healthy, medically ill, or mildly to moderately cognitively impaired, featuring 15 items with ten positive and five negative responses, thus offering a standardized assessment. Scoring interpretation categorizes individuals as follows: 0-4 for no depression, 5-8 for mild depression, 9-11 for moderate depression, and 12-15 for severe depression.

4 World Health Organization BREF Quality of Life.

The WHOQOL-BREF (World Health Organization Quality of Life - Brief version) is a widely used 26-question questionnaire developed by the World Health Organization (WHO) to assess an individual's quality of life, derived from the comprehensive WHOQOL-100. It encompasses four key domains: Physical Health, evaluating daily functioning, energy, and pain perception; Psychological Health, gauging emotional well-being and self-esteem; Social Relationships, focusing on interpersonal connections and support; and Environment, measuring satisfaction with living conditions, access to healthcare, financial resources, and safety. This tool is adaptable for assessing quality of life across diverse cultural contexts and health conditions.

Each domain is evaluated through a series of questions using a 5-point Likert scale for participants to rate their satisfaction or dissatisfaction. These scores are then converted to a 0 to 100 scale, with higher scores indicating better quality of life. The WHOQOL-BREF is widely employed in research, clinical, and public health settings to gauge individuals' well-being perceptions and assess the effects of interventions on their QoL. It aids in identifying strengths and areas needing improvement to inform healthcare and policy choices.

3.2.6 Reliability of the tools.

Reliability, as defined by Polit and Beck (2008), refers to the degree of consistency in an instrument. MMSE is a quick and simple cognitive measure that assesses seven cognitive areas and demonstrates high sensitivity (0.81) and specificity (0.60) with a high correlation of r = 0.86 (Pandav et al., 2002). The Geriatric Depression Scale, widely used with older populations, exhibits strong validity and reliability, indicated by a high correlation ($r = 0.84$, $p < .001$) (Sheikh & Yesavage, 1986). Quality of life was evaluated using the WHO BREF Quality of Life questionnaire, which demonstrated high reliability at 0.89 across its various domains.

3.2.7 Selection of sample for study

After the ethical clearance and approval from the study area, a house-to-house survey was conducted with ASHA and healthcare workers. Around 455 houses were surveyed by door-to-door method with house register. Population screening was done for 428 older adults aged above 60 years. Among them, 327 older adults were selected based on the inclusion and exclusion criteria through random sampling in the assessment phase (Phase 1). We screened a total of 327 participants in Phase 1 for mild cognitive impairment and Mild Depression in the same individual for Phase 2.

3.2.8 Data Collection Procedure

The data collection procedure in rural communities holds paramount importance as it allows us to capture unique insights from an often underrepresented demographic. These insights are crucial for a comprehensive understanding of present research.

The data collection procedure is the core upon which our research insights were built and developed as per the study objectives. Before the data collection, we established meaningful connections within the rural (figure 4) communities, which involved building trust, explaining the research objectives, and garnering community support. All participants provided informed consent before being included in the study. The assessment tools which were used in the study were standardized and can be used by any health care professionals and available for the public domain.

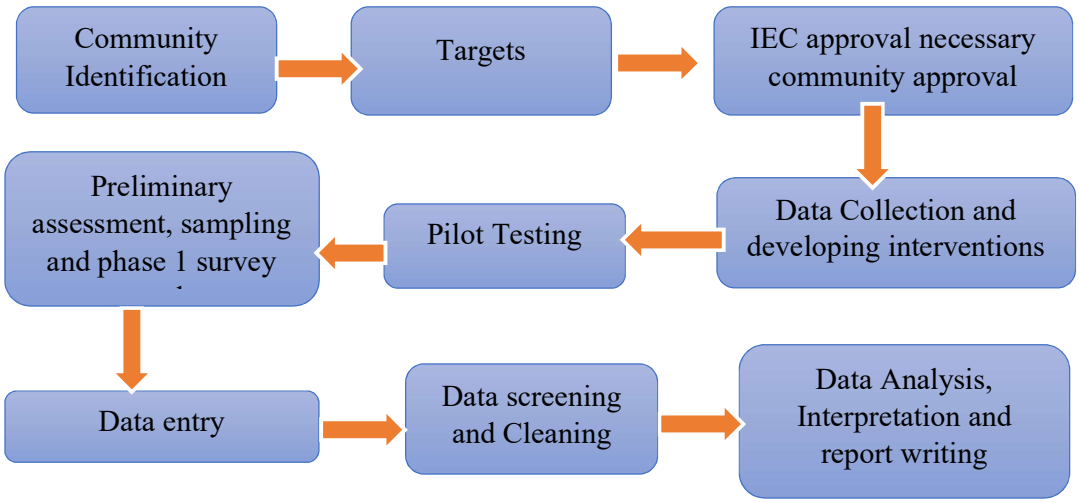


Figure 4 Data Collection Procedure

3.2.9 Statistical Analysis: The data was analyzed using SPSS 25 version and MS Excel. Descriptive statistical analysis was calculated to summarize the characteristics of the study participants, and bivariate analysis was used to explore the relationship between cognitive functions, geriatric depression and quality of life.

3.3 Phase Two- Intervention phase

3.3.1 Research Design

In the second phase of this study, a randomized controlled trial (RCT) design was employed. Randomized controlled trials are the gold standard trials and are prospective studies that measure the effectiveness of an intervention. An individual RCT generates Level 2 evidence for clinical practice (LoBiondo-Wood, Haber, Berry, & Yost, 2013; Melnyk & Fineout- Overholt, 2011). The participants included in this phase had mild cognitive impairment (MMSE Score 18-23) and mild depression (GDS score 5-9).

This intervention phase was carried out in Chitkul village (a rural community setting) to evaluate the effectiveness of group reminiscence among older adults by following the principles of randomization, control and manipulation, which can produce reliable and valid knowledge for clinical practice. Schematic presentation of the research design was presented in Figure Fig.5

Randomization:

Randomization ensures that each participant has an equal chance of receiving any of the treatments under study. Randomization eliminates selection bias, confounding bias and accidental bias. Randomization was conducted using a Lottery method (Simple Randomization), and the study subjects were allotted to experimental and control groups. Using the slip-of-paper lottery method in a randomized controlled trial (RCT) involves a straightforward process of random selection. After the preliminary assessment was done based on the inclusion criteria from the defined population, a unique number was given to each member of the population, and each number was written on a separate slip of paper. Later, all the slips of paper with the unique identifiers were placed in a box. After that, participants were asked to pick up the slip from the box each slip represented one participant in the study. After selecting a slip of paper,

the identifier was recorded, and the corresponding participant was assigned to the appropriate experimental or control group based on the predetermined randomization scheme. After the random selection process, the researcher was informed to the selected participants that they had been chosen to be part of the study. Thus, this method helped in preventing selection and confounding bias in this study. The target population were randomly assigned to the experimental group (65) and control group (65). The groups consist of both males and females.

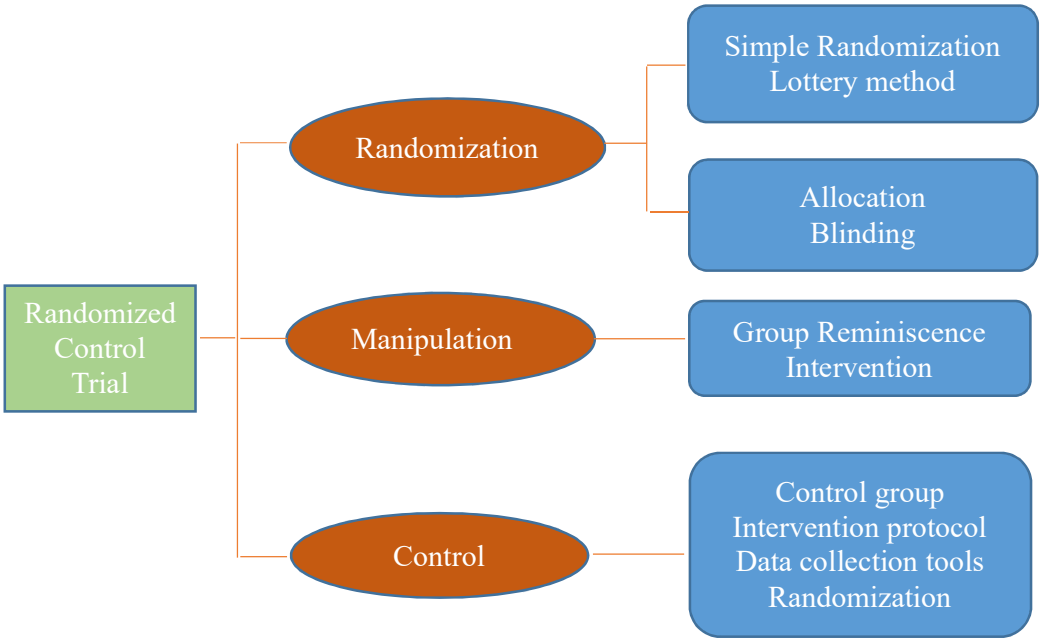


Fig 5. Schematic representation of randomization, manipulation and control process

Allocation:

By following the principles of probability and equipoise, the subjects were randomized into an experimental and control group with a 1:1 allocation ratio.

Allocation concealment: Allocation was concealed by using sequentially numbered, opaque sealed envelopes (SNOSE). Concealment was ensured by numbering the envelopes in advance, and during the intervention assignment, it was opened

sequentially only after writing participant details on the appropriate envelope. This helped to prevent deciphering of treatment assignments.

Allocation implementation: In the present study, sequence generation was done by the Lottery method. From the identified population, assign a unique identifier number to each member of the population. A researcher made sure that the identifiers were unique and covered all the basics of the population. Prepare sealed envelopes, each containing one unique identifier from the list of population members. The envelopes were opaque, meaning that the identifier was not visible from the outside. SNOSE were prepared by a second person other than the researcher with the help of a randomization list and were kept with ASHA after preparation. The researcher identified and recruited the participants based on eligibility criteria. ASHA worker who was not involved in the study opened the envelope and allocated the patients to interventions. The randomization schedule was concealed by this approach.

Blinding:

Blinding, in research, refers to an exercise where study members are banned from knowing certain information that may somehow influence them, tainting the results. Blinding (masking) is typically used in randomized controlled trials (RCTs). Blinding of one or more parties is done to avert observer bias (Pandis, 2012). Due to the nature of the present study, it was not possible for a blind researcher. Hence, the study was a single-blinded one (participants were blinded).

Manipulation:

Manipulation refers to "An intervention introduced by the researcher in an experimental study to assess its impact on the dependent variable" (Polit, & Beck, 2012). In this study, manipulation refers to the group reminiscence provided by the investigator to older adults apart from routine care. This intervention is a complex non-

pharmacotherapy with different themes and requires 12 weeks to deliver the full intervention. Group reminiscence lasted for one hour, and this whole programme was delivered in a face-to-face mode to the group of older adults.

Control:

The control group is a key part of the research studies, and it will help reduce the likelihood that any benefits or risks that the researchers identify during the trial occur due to factors outside of the experimental treatment. The absence of a control group would mean that the researchers could not attribute any improvement or decline in health to the intervention. The control group serves as a comparison for the experimental group. The control group received no intervention in this study, but general health education was provided. The schematic representation of the research design and CONSORT Flow diagram on the progress of participants of this RCT are shown in Fig 6.

Inclusion Criteria:

- Mild Cognitive Impairment and Mild Geriatric Depression
- Willing to participate in Intervention and willing to give consent

Exclusion criteria:

- Severe hearing loss, severe Cognitive Impairment and severe depression.
- Older adults with recent medical or surgical intervention
- Severe communication problem
- Recent participation in any Cognitive training.

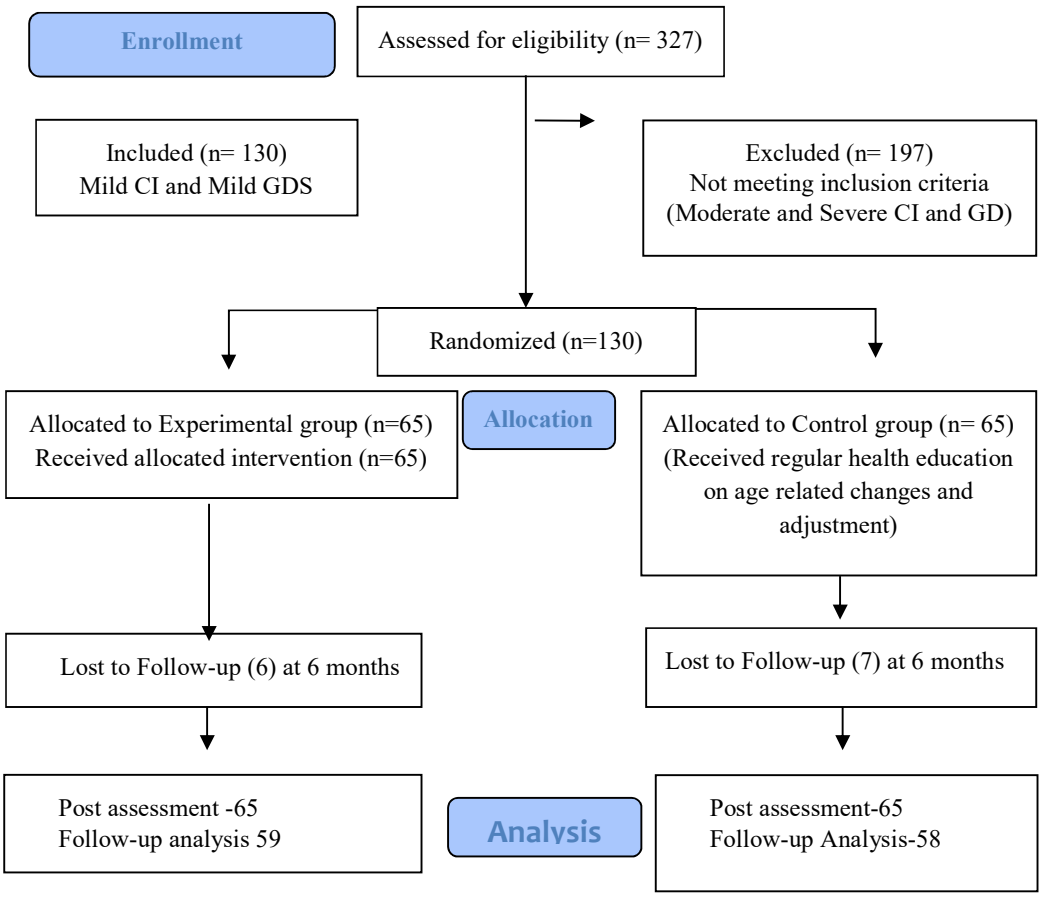


Fig 6. Consort Flow diagram on recruitment of participants in phases two

3.3.2 Clinical Trial Registration:

This trial has been registered in http://ctri.nic.in (CTRI/2021/12/038562 Registered on 10/12/2021), and the trial was registered prospectively.

3.3.3 Development and Implementation of Group Reminiscence Intervention:

Group reminiscence intervention is a therapeutic approach that involves engaging a group of individuals in discussions and activities that encourage the sharing of memories and life experiences. It is often used to enhance well-being, cognitive functioning, and social connections among participants, especially in older adults. Here are the steps to describe the development of group reminiscence intervention (fig.7)

Steps to Develop Group Reminiscence Intervention

1 Identify the objectives

The first step in designing this program was to establish clear and measurable objectives. These objectives have been carefully determined, focusing on enhancing cognitive abilities, improving overall quality of life, reducing symptoms of depression in the elderly, fostering social engagement, and strengthening emotional connections.

2 Target Audience:

Our target audience has been carefully selected based on scientific criteria. Specifically, we have chosen individuals aged 60 years and older who have been screened with MCI and MGD from the assessment phase. The selection process takes into account demographic characteristics, interests, and preferences, which are scientifically recognized as influential factors in tailoring effective programs.

3 Choose Themes:

Thematic content selection is a critical aspect of our program design, informed by scientific research. These themes are centred on various life stages, historical events, personal achievements, and cultural experiences, as these fundamentals have been shown to stimulate memory and cognitive function. These themes serve as the foundation for our discussions and activities.

4 Session Structure:

To ensure the efficacy of the program, we have scientifically determined the structure of each session, including its frequency, duration, and format. Based on research findings, we have established a weekly schedule with sessions lasting approximately one hour each, lasting over a 12-week period. These sessions are designed to facilitate meaningful discussions and engagement.

5 Materials and prompts for Discussion:

We selected materials such as photographs of national figures, music, videos featuring old songs, and relevant memorabilia associated with the selected themes. These materials are known to act as memory triggers, enhancing the reminiscence process. Our program incorporates a set of systematically constructed questions and prompts directly linked to our chosen themes. These prompts have been designed to encourage participants to share their personal stories, memories, and experiences, aligning with established reminiscence therapy techniques.

6 Develop session plan and adopt accessibility:

The creation of session plans is of utmost importance, and these plans have been developed to plan the structural activities, discussion prompts, and the utilization of materials for each session. To ensure inclusivity, we have taken values into account by making our program accessible to all participants. This includes considerations for physical mobility, hearing impairments, and cognitive limitations in line with established accessibility guidelines.

7 Training of the Investigator/facilitator:

The investigator leading the program has undergone training in proven reminiscence techniques, group dynamics management, and handling of sensitive topics, ensuring the program's effectiveness and safety.

8 Pilot study, monitoring and evaluation:

Before the official launch of the program, we conducted pilot sessions to assess its feasibility and make any necessary adjustments based on empirical data. Continuous monitoring of the program's impact on participants is an integral part of our approach. Gathering feedback allows us to assess its effectiveness in achieving our predefined objectives.

9 Documentation:

Throughout the program, we document participants' experiences, stories, and outcomes, adhering to scientific data collection and analysis standards. This documentation serves as a valuable resource for future reference and the dissemination of success stories within the scientific community.

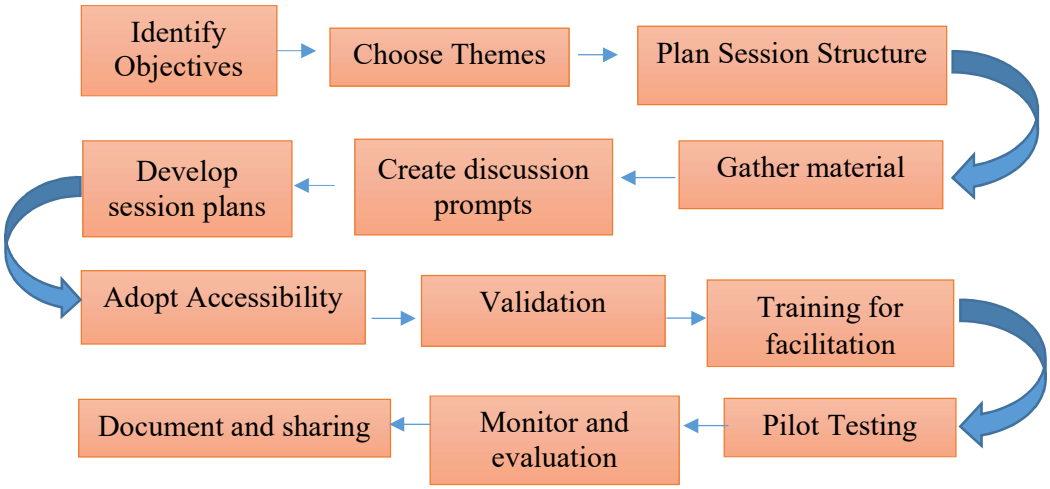


Fig.7 Development of Group Reminiscence

In Summary, the intervention protocol consisted of a twelve-week programme. The intervention was conducted in the pre-structured sessions and lasted for 60 minutes for each theme. The intervention (Group Reminiscence) protocol was developed by the researcher with the support of the Supervisor. Group reminiscence intervention for 12 weeks with 12 different themes was developed, which are focused on their life history and positive life experiences. This intervention protocol was evaluated and validated by subject experts: a psychiatrist, three psychologists and one nursing professor along with a PhD supervisor. Intervention protocol was implemented by the investigator, who was trained to conduct a reminiscence program and conducted the research under the guidance and monitoring of the supervisor. We use props like photographs, charts and music of film clips that are meant to trigger a memory of identity. Older adults were

encouraged to remember their positive experiences and achievements to share with the group members. Statistical analysis includes non-parametric tests were performed to know the effectiveness of the intervention. The study outcomes contribute to building new scientific evidence for the positive benefits of the Group reminiscence intervention to promote the mental health of older adults.

3.3.4 Implementation of Group Reminiscence Intervention:

Group reminiscence intervention is a structured method aimed at enhancing the emotional well-being and social connections of older adults by encouraging them to recall and share their life experiences within a supportive group setting. The procedure involves several key steps (Table 3).

1) Assessment Phase: The initial step in this intervention process involves gathering essential information. This was achieved through interviews, the use of standardized assessments, and a thorough examination of relevant data. These data-gathering methods help in comprehensively understanding the specific characteristics and needs of the group that will be participating in the intervention.

2) Planning Phase: Following the assessment, the focus shifts to the planning phase. During this stage, the team establishes clear goals and objectives based on the insights gained from the assessment phase. Strategies and interventions are thoughtfully designed to align with these goals. It's a tailored approach, ensuring that the intervention is well-suited to address the unique needs of the group.

3) Engagement Phase: Building a strong foundation of trust and rapport with the participants is vital. In this phase, participants were introduced to the purpose and potential benefits of the intervention. Creating a supportive and positive atmosphere was paramount for successful engagement, as it set the stage for the forthcoming weeks.

4) Implementation Phase: This was where the intervention came to life. Over the course of 12 weeks, with each week dedicated to a specific theme, the planned strategies and activities are executed. These activities are carefully designed to directly address the group's identified needs and work towards achieving the established goals.

5) Monitoring and Evaluation: Throughout the intervention, continuous monitoring and evaluation take place. This ongoing assessment helps gauge the effectiveness of the intervention. It also serves as a crucial feedback loop, allowing for adjustments to be made as necessary to enhance its impact.

6) Closure and Follow-up: As the intervention nears its conclusion, participants are provided with support and guidance to facilitate a successful transition. This includes preparing them for what comes next. Furthermore, a 6-month follow-up phase is implemented to assess the sustained impact of the intervention on participants' lives and overall well-being.

This structured process involves a systematic journey from gathering information and careful planning to engagement, implementation, ongoing evaluation, and eventual closure with follow-up support. The objective is to assess the effectiveness of the intervention while ensuring that participants receive continuous assistance and evaluation to achieve lasting positive outcomes.

Table 3. Steps to implement Group reminiscence intervention

Assessment Phase	Involved gathering information, conducting interviews, using standardized assessments, and consulting relevant data.
Planning Phase	Goals and objectives were established, and strategies are designed to address the specific needs of the group involved.
Engagement Phase	Building rapport and trust are essential, and participants are informed about the intervention's purpose and potential benefits.
Implementation Phase	The intervention took place according to the planned strategies 12 weeks with 12 themes for experimental groups
Monitoring and evaluation	Progress was monitored and evaluated to determine the effectiveness of the intervention.
Closure and Follow-up	Participants are provided with support and guidance to transition successfully after the intervention ends.
	6- Months follow-up phase was conducted to ensure the sustained impact of the intervention

3.4 Plan for Data analysis

Data analysis, guided by a statistician, employed SPSS-25. Descriptive statistics assessed sample characteristics, while inferential statistics measured inter-group and intra-group outcome variable differences based on study objectives and hypotheses. Baseline group characteristics were compared using appropriate parametric or non-parametric tests.

Summary:

This chapter dealt with the research methodology including research approach and design, research setting, sample, sampling technique, sampling criteria and data collection instruments with description of content validation, pretesting and reliability testing, ethical considerations, pilot study, procedure for data collection, difficulties faced during study and plan for data analysis.

CHAPTER - IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of the data gathered to assess the effectiveness of group reminiscence on cognitive impairment, depression and quality of life among older adults. The data collected was categorized and analysed based on the study objectives and hypotheses using descriptive and inferential statistics. SPSS version 25 was used to analyse the data. The study results were presented in two sections: Phase One study results and Phase Two study results. In phase one, descriptive analysis and phase two, the effectiveness of Intervention analysis was discussed.

Objectives of the study

The objectives of the study are to;

1. Study the cognitive functions among older adults
2. Measure the depression among older adults
3. Assess the quality of life among older adults
4. Develop and evaluate the effectiveness of group reminiscence on cognitive functions, depression and QoL among older adults.

Hypothesis

H_1: There will be a positive effect of group reminiscence and cognition.

H_2: There will be a positive effect of group reminiscence and Geriatric depression

H_3: There will be a significant difference between pre-posts in the experimental group related to quality of life.

Phase One Study Results

In the following sections, the data analysis was presented for the first three objectives.

- Section one: Frequency and percentage distribution of study participants
- Section two: Prevalence of Depression and Cognitive Impairment among older adults.
- Section three: Association between Cognitive impairment and Depression with demographic variables among older adults

Section one: Frequency and percentage distribution of Study Participants

Table 4. Socio-Demographic Distribution of Study Participants

Variables	Men N (%)	Women N (%)	$\chi 2$	P value
Age				
60-70	79 (62.7)	134 (66.7)	1.53	0.74
71-80	38 (30.2)	54 (26.9)		
81-90	6 (4.8)	11 (5.5)		
91-100	3 (2.4)	2 (0.9)		
Marital Status				
Married	109 (86.5)	95 (47.3)	50.83	0.000
Widow/Widower	17 (13.5)	106 (52.7)		
Education				
No formal Education	53 (42)	133 (66.2)	41.06	0.000
Primary /Secondary Education	31 (24.6)	53 (26.4)		
High School	28 (22.2)	14 (7.0)		
College/University	14 (11.1)	1 (0.5)		
Religion				
Hindu	85 (67.5)	127 (63.2)	3.86	0.15
Christian	20 (15.9)	49 (24.4)		
Muslim	21 (16.7)	25 (12.4)		
Income				
Government Pension	24 (19)	29 (14.4)	18.88	0.000
Son	38 (30.2)	90 (44.8)		
Daughter	25 (19.9)	55 (27.4)		
Self/Spouse	39 (31)	27 (13.4)		
Type of Family				
Nuclear Family	61 (48.4)	103 (51.2)	0.29	0.618

Joint Family	65 (51.6)	98 (48.8)		
No of Children				
None	1 (0.8)	5 (2.5)	3.38	0.34
One	42 (33.3)	51 (25.4)		
Two	30 (23.8)	53 (26.4)		
Three and More	53 (42.1)	92 (45.8)		
Financial Stability				
Have enough money to meet daily needs	13 (10.31)	4 (1.99)	10.97	0.004
Need additional support to meet needs	24 (19.04)	44 (21.89)		
Struggling to meet daily needs	89 (70.63)	153 (76.11)		
Speaking with children				
Not speaking	1 (0.8)	5 (2.5)	14.7	0.005
Once in a week	44 (34.9)	92 (45.8)		
Twice in a week	49 (38.9)	74 (36.8)		
Once in a month	20 (15.9)	27 (13.4)		
Rarely	12 (9.5)	3 (1.5)		
Current Health				
Excellent	18 (14.3)	13 (6.5)	12.38	0.006
Good	28 (22.2)	45 (22.4)		
Fair	20 (15.9)	61 (30.3)		
Poor	60 (47.7)	82 (40.8)		
Family Support				
Excellent	22 (17.5)	20 (10)	7.68	0.053
Good	63 (50)	89 (44.3)		
Fair	27 (22.4)	55 (27.4)		
Poor	14 (11.1)	37 (18.4)		
Social Support				
Excellent	37 (29.4)	28 (14)	15.18	0.002
Good	49 (38.9)	77 (38.3)		
Fair	17 (13.5)	51 (25.4)		
Poor	23 (18.2)	45 (22.9)		
Leisure time activity				
Watching TV	41 (32.5)	96 (47.8)	20.9	0.000
Gardening	18 (14.3)	38 (18.9)		
Reading Newspaper/ Books	46 (36.5)	30 (14.9)		
Any other	21 (16.7)	37 (18.4)		
Rapport with neighbour				
Almost every day	15 (11.9)	8 (4)	10.9	0.028
Often	29 (23)	34 (16.9)		
Sometimes	49 (38.9)	99 (49.3)		
Rarely	14 (11.1)	22 (10.9)		
Never	19 (15.1)	38 (18.9)		

The findings of the study were distributed by gender; of the total, 126 (38.5%) were men, and 201 (68.5%) were women. The mean age of men, women and overall subjects were 69.45, 68.80 and 69.05, respectively. The majority of individuals in the 60-70, 71-80 and 81-90 age groups are women, comprising 66.7%, 26.9% and 5.5% of the respective groups. With regard to the marital status of the study participants, the majority of the male participants were married (86.5%), and 13.5% were widows or widowers. Among women, the majority of the participants' marital status was widow or widower (52.7%) and married were 47.3%.

In terms of the educational qualifications of the study participants, a significant majority of them have not received any formal education, with 42% of men and an even larger percentage of women at 66.2% falling into this category. Men have completed primary or secondary education at a rate of 24.6%, while women have a higher completion rate at 56.4%. When it comes to higher education levels such as high school and college/university, men have attained these qualifications at rates of 22.2% and 11.1%, respectively, while women have achieved them at rates of 7% and 0.5%. These findings underscore disparities in educational attainment between genders within the studied population.

Concerning the religious practices of the study participants, a significant majority, both men (67.5%) and women (63.2%), identified themselves as practitioners of the Hindu faith. Following closely, 24.4% of women and 15.9% of men reported being Christians, while Muslims comprised 16.7% of men and 12.4% of women within the study population. These findings highlight the prevalence of Hinduism among both genders, followed by Christian and Muslim religious associations.

With regards to the income of the study participants, among women, the primary income source was from their sons, with 44.8% (90 individuals). The second most common income source was from their daughters, with 27.4% (55 individuals). Income from government pensions was received by 14.4% (29 individuals), while the least common income source among women was from their own or spouse's income, with 13.4% (27 individuals). For men, the primary income source was from their sons, with 30.2% (38 individuals). The second most common income source was from their own or their spouses' income, with 31% (39 individuals). Government pensions provide an income for 19% (24 individuals) of men, while the least common income source among men is their daughters, with 19.9% (25 individuals).

With regards to the type of family, among men, 48.4% (61 individuals) belong to nuclear families, while 51.6% (65 individuals) are part of joint families. Among women, 51.2% (103 individuals) are in nuclear families, while 48.8% (98 individuals) reside in joint families. With regards to the number of children in Subjects, among men, the majority of the subjects had three or more children, while 33% had one child, 23.8% had two children and a small portion, comprising only 0.8%, had no children. Similarly, among women, most of the women had three or more children (45.8%) 26.4% had two children, 25.4% had one child, and only 2.5% had no children.

The data regarding the Financial Stability of the participants, most of the participants, both women and men (76.11% and 70.63) reported that they were struggling to meet daily requirements. Need additional support to meet needs required reported by 21.89% of women and 19.04% of men to reach daily requirements. Very few participants, men (10.31%) and women (1.99%) reported that they had enough money to meet regular needs.

Regarding the frequency of communication between individuals and their children, among women, a significant 45.8% of participants were engaging with their children once a week, followed by 36.8% engaging twice a week. Furthermore, 13.4% communicate with their children once a month, while only 1.5% do so rarely. On the men's side, 38.9% of older adults were communicating with their children once a week, while 34.9% twice a week. Additionally, 15.9% communicate once a month, and a very small percentage, 0.8%, rarely communicate with their children.

In the study, the majority of women participants (40.8%) described their health status as poor, followed by 30.3% reporting fair health, 22.4% indicating good health, and only 6.5% observed excellent health. Among men participants, a majority reported their health as poor (47.7%), while 22.2% described it as good, 15.9% as fair, and 14.3% as excellent. Concerning family support, among women, a significant 44.3% noted that they received good support from their families, followed by 27.4% reporting fair support, 18.4% describing it as poor, and a smaller 10% mentioning excellent family support. Among men, the majority, at 50%, reported good family support, while 11.1% indicated poor support, 22.4% reported fair support, and 17.5% expressed having excellent family support. In terms of social support, among women, a notable 38.3% reported experiencing good social support, while 25.4% perceived their support as fair. Additionally, 22.9% indicated having poor social support, and 14% reported excellent social support. Among men, 38.9% reported having good social support, with 29.4% describing it as excellent. 18.2% of men mentioned experiencing poor social support, and 13.5% reported only fair levels of support.

In terms of leisure time activities, the majority of participants engaged in watching TV, with 32.5% of men and 47.8% of women. Gardening was another common activity, with 14.3% of men and 18.9% of women where they were enjoying

it. Reading newspapers or books was a common choice, accounting for 36.5% of men and 14.9% of women. Additionally, 16.7% of men and 18.4% of women mentioned engaging in other leisure activities.

In terms of rapport with neighbours, participants reported a range of interactions. Some individuals connected almost every day, accounting for 11.9% of men and 4% of women, while others engaged often (23% of men and 16.9% of women) or sometimes (38.9% of men and 49.3% of women). A portion reported less frequent interaction, with 11.1% of men and 10.9% of women interacting rarely, and some individuals, 15.1% of men and 18.9% of women stated that they never engaged with their neighbours.

In conclusion, gender is associated with several variables in this study, including marital status, education, income source, financial stability, communication frequency with children, current health status, and leisure activities. Men are more likely to be married, have higher education levels, and rely on their income or sons for financial support, while women often lack formal education, depend on daughters for income, and engage in watching TV as a leisure activity. Social support and rapport with neighbours also vary by gender. However, age, family type, the number of children, and family support appear independent of gender. These findings provide valuable insights into demographic and social disparities within the surveyed population.

Section Two: Prevalence of Depression and Cognitive Impairment among older adults

In this study, we examined the prevalence of cognitive impairment depression across different severity levels in a sample of 327 older adults. The data is presented below.

Among the individuals participated in this study reported that, notably, 46.2% of the sample (151 individuals) showed no signs of depression, while 39.8% (130 individuals) experienced mild depressive symptoms. A smaller subgroup, constituting 8.0% (26 individuals), exhibits moderate depression, and 6.1% (20 individuals) are classified with severe depression. Data was presented in table (5) and Fig (8).

Table 5. Prevalence of Depression among older adults

Depression	Frequency	Percentage
No Depression	151	46.2%
Mild Depression	130	39.8%
Moderate Depression	26	8%
Severe Depression	20	6.1%
Total	327	100%

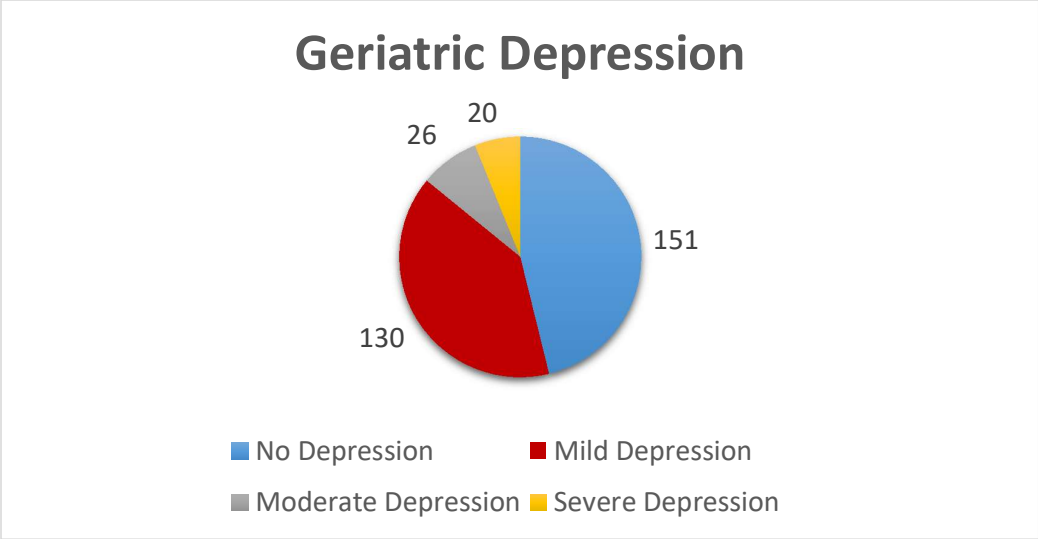


Fig 8. Prevalence of depression among older adults.

Table 6. Prevalence of Cognitive impairment among older adults

Cognitive Impairment	Frequency	Percent
No Cognitive Impairment	148	45.3
Mild Cognitive Impairment	130	39.8
Severe Cognitive Impairment	49	15
Total	327	100

The above table (6) describes the data on cognitive impairment frequency and percentages within a sample of 327 individuals. Cognitive impairment is categorized into three levels: "No Cognitive Impairment," "Mild Cognitive Impairment," and "Severe Cognitive Impairment." Notably, 148 individuals (45.3%) observed no cognitive impairment, indicating normal cognitive function, while 130 individuals (39.8%) exhibit mild cognitive impairment, suggesting subtle deficits. Additionally, 49 individuals (15.0%) are classified as having severe cognitive impairment, representing a significant cognitive decline. This data provides a comprehensive picture of cognitive impairment prevalence and severity in the sample, offering critical insights for scientific research and clinical evaluations in understanding cognitive health within this population. Percentage distribution was presented in Fig (9).

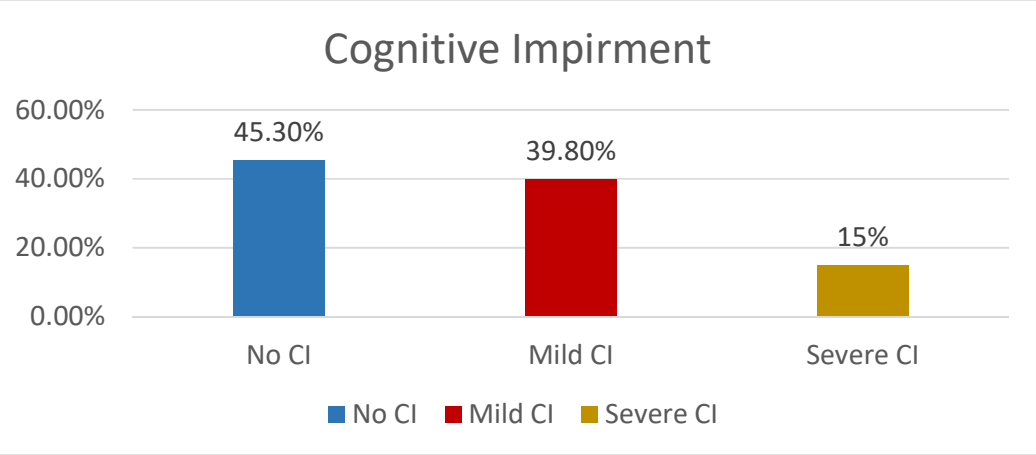


Fig 9. Prevalence of Cognitive impairment among older adults

Section Three: Association between Cognitive Impairment and Depression with selected demographic variable among older adults.

These sections describe the relationships between the demographic variables with cognitive impairment and depression among older adults. To find out the association between them chi-Square test was used and P< 0.05 considered to be statistically significant.

Table 7. Association between sociodemographic variables with Cognitive Impairment

Variables	Cognitive Impairment			
Gender	**Yes**	**No**	**χ^2**	**P**
Men	57 (31.8)	69 (46.6)	7.47	0.006
Women	122 (68.2)	79 (53.4)		
Age				
60-70	99 (55.3)	114 (77)	21.7	0.000
71-80	60 (33.5)	32 (21.6)		
81-90	15 (8.4)	2 (1.4)		
91-100	5 (2.8)	0		
Marital Status				
Married	105 (58.7)	99 (66.9)	2.34	0.12
Widow/Widower	74 (41.3)	49 (33.1)		
Education				
No formal Education	106 (59.2)	80 (54.1)	33.34	0.000
Primary/Secondary Education	60 (33.5)	24 (16.2)		
High School	10 (5.6)	32 (21.6)		
College/University	3 (1.7)	12 (8.1)		
Religion				
Hindu	114 (63.7)	98 (66.2)	0.23	0.89
Christian	39 (21.8)	30 (20.3)		
Muslim	26 (14.5)	20 (13.5)		
Income				
Government Pension	21 (11.7)	32 (21.6)	77.7	0.000
Son	103 (57.5)	25 (16.9)		
Daughter	44 (24.6)	36 (24.3)		
Self/Spouse	11 (6.1)	55 (37.2)		
Type of Family				
Nuclear Family	77 (43)	87 (58.8)	8.06	0.005
Joint Family	102 (57)	61 (41.2)		
Children				
None	6 (3.4)	0	12.93	0.005
One	41 (22.9)	52 (35.1)		
Two	42 (23.5)	41 (27.1)		
Three and more	90 (50.3)	55 (37.2)		
Financial stability				
Have enough money to meet daily needs	10 (5.6)	7 (4.7)	3.77	0.15
Need additional support to meet needs	44 (24.6)	24 (16.2)		
Struggling to meet daily needs	125 (69.8)	117 (79.1)		

Speaking with children				
Not speaking	6 (3.4)	0	73.87	0.000
Once in a week	107 (59.8)	29 (19.6)		
Twice in a week	54 (30.2)	69 (46.6)		
Once in a month	10 (5.6)	37 (25)		
Rarely	2 (1.1)	13 (8.8)		
Current Health				
Excellent	3 (1.7)	28 (18.9)	28.12	0.000
Good	43 (24)	30 (20.3)		
Fair	49 (27.4)	32 (21.6)		
Poor	84 (46.9)	58 (39.2)		
Family support				
Excellent	15 (8.4)	27 (18.2)	20.23	0.000
Good	86 (48)	66 (44.6)		
Fair	38 (21.2)	44 (29.7)		
Poor	40 (22.3)	11 (7.4)		
Social support				
Excellent	4 (2.2)	61 (41.2)	119.3	0.000
Good	73 (40.8)	53 (35.8)		
Fair	34 (19)	34 (23)		
Poor	68 (38)	0		
Leisure time activity				
Watching TV	79 (44.1)	58 (39.2)	2.17	0.54
Gardening	26 (14.5)	30 (20.3)		
Reading newspaper/ Books	43 (24)	33 (22.3)		
Any other	31 (17.3)	27 (18.2)		
Rapport with neighbours				
Almost every day	6 (3.4)	17 (11.5)	62.9	0.000
Often	15 (8.4)	48 (32.4)		
Sometimes	82 (45.8)	66 (44.6)		
Rarely	25 (14)	11 (7.4)		
Never	51 (28.5)	6 (4.1)		

In the provided data, a complete examination of various variables and their association with cognitive impairment is presented. Firstly, the analysis examines gender as a variable. The data shows that 31.8% of men and 68.2% of women in the study have cognitive impairment, while 46.6% of men and 53.4% of women do not. A chi-square test reveals a statistically significant association between gender and cognitive

impairment ($\chi 2 = 7.47$, $p = 0.006$), suggesting that gender may play a role in susceptibility to cognitive impairment.

Next, the study investigates age as a factor. It categorizes participants into age groups, with varying percentages of cognitive impairment within each group. Particularly, the chi-square test indicates a highly significant association between age and cognitive impairment ($\chi 2 = 21.7$, $p = 0.000$), emphasizing that older individuals are more likely to experience cognitive impairment.

Marital status is also examined, revealing that 58.7% of married older adults and 41.3% of widows/widowers have cognitive impairment. However, the chi-square test does not find a statistically significant association between marital status and cognitive impairment ($\chi 2 = 2.34$, $p = 0.12$), suggesting that marital status may not be a significant factor in this context.

Education is another critical variable that shows that individuals with no formal education have a higher prevalence of cognitive impairment (59.2%) compared to those with primary/secondary education (33.5%), high school (5.6%), and college/university education (1.7%). The chi-square test indicates a strong association between education and cognitive impairment ($\chi 2 = 33.34$, $p = 0.000$), emphasizing the importance of education in cognitive health.

With regards to the data on Religion, among the participants, 63.7% of Hindus have a cognitive impairment, 21.8% of Christians experience Cognitive impairment and only 14.5% of the Muslims population suffer from cognitive impairment. However, a statistical analysis using the chi-square test indicates that there is no statistically significant association between religion and cognitive impairment ($\chi 2 = 0.23$, $p = 0.89$).

Another factor called income of the study participants, among the participants, 57.5% of older adults who were supported by their son recorded a high prevalence of Cognitive

impairment, followed by 24.6% of daughters, 11.7 % government pensions and a few people who supported by themselves or spouse had 6.1% of Cognitive impairment. A chi-square analysis reported that the Income of the participants was significantly associated with Cognitive impairment ($\chi2$=0.23 with a p-value of 0.89). With regards to the family type, the Joint family (57%) recorded a high prevalence of Cognitive impairment, followed by 43% of the Nuclear family, and that was significantly associated with cognitive impairment ($\chi2 = 8.06$, $p = 0.005$).

This study also assesses the association between the Number of children (none, one, two, three and more) and Cognitive impairment. Those with Three or More children have the highest percentage of cognitive impairment (50.3%). The Chi-squared test results ($\chi2 = 12.93$, $p = 0.005$) indicate a statistically significant association between the number of children and cognitive impairment, suggesting that having more children may be associated with a higher risk of cognitive impairment.

Regarding financial stability, Participants are categorized into three groups; have enough money to meet daily needs, need additional support to meet needs, and struggle to meet daily needs. The data shows varying percentages of cognitive impairment in these categories. Among them, those who are struggling to meet daily needs have the highest percentage of cognitive impairment (69.8%). The Chi-squared test results ($\chi2 = 3.77$, $p = 0.15$) suggest no statistically significant association between financial situation and cognitive impairment, although there is an inclination towards significance.

With regards to other variables called current health, family support and social support of the study participants, the results show that, among the participants, a high prevalence of cognitive impairment was recorded in poor health status 46.9%, Poor family support 22.3% and poor family support 22.3%. These variables were statistically

significant; current health ($\chi 2 = 28.12$, $p = 0.000$), family support ($\chi 2 = 20.23$, $p = 0.000$) and social support ($\chi 2 = 20.23$, $p = 0.000$). It suggests that individuals reporting better health, good family and social support lower the prevalence of Cognitive impairment among older adults

With regards to the leisure time activity of the study participants, the study reveals that there is no statistically significant cognitive impairment ($\chi 2 = 2.7$, $p = 0.54$), but subjects who watch TV (44.1%) recorded a high prevalence of Cognitive impairment and who work in the garden (14.5%) report low cognitive impairment. Finally, another variable called rapport with the neighbours, among the participants with rapport every day (3.4%) reported low cognitive impairment, whereas the participants who maintained the rapport sometimes only reported a high prevalence of cognitive impairment (45.8%). The Chi-squared test results ($\chi 2 = 62.9$, $p = 0.000$) indicated a statistically significant association between the rapport with a neighbour and cognitive impairment.

In summary, this data analysis highlights various factors associated with cognitive impairment among the studied population. Gender, age, education level, type of family, number of children, current health status, family support, social support, and rapport with neighbours all play important roles in the prevalence of cognitive impairment. Understanding these associations can inform healthcare and support strategies for individuals at risk of cognitive impairment. Next, the association between depression and demographic variables were discussed.

Table 8. Association between sociodemographic variables with depression

Variables	Depression		χ2	P
	Yes (%)	No (%)		
Gender				
Men	57 (45.2)	69 (54.8)	6.07	0.014
Women	119 (59.2)	82 (40.80)		
Age				
60-70	96 (54.5)	117 (77.5)	23.76	0.000
71-80	60 (34.1)	32 (21.2)		
81-90	15 (8.5)	2 (1.3)		
91-100	5 (2.8)	0		
Marital Status				
Married	103 (58.5)	101 (66.9)	2.42	0.12
Widow/Widower	73 (41.5)	50 (33.1)		
Education				
No formal Education	103 (58.5	83 (55)	32.78	0.000
Primary Education/Secondary Education	60 (34.1)	24 (15.9)		
High School	10 (5.7)	32 (21.2)		
College/University	3 (1.7)	12 (7.9)		
Religion				
Hindu	112 (63.6)	100 (66.2)	0.26	0.87
Christian	38 (21.6)	31 (20.59)		
Muslim	26.(14.8)	20 (13.2)		
Income				
Government Pension	19 (10.8)	34 (22.5)	80.11	0.000
Son	103 (58.5)	25 (16.6)		
Daughter	43 (24.4)	37 (24.5)		
Self/Spouse	11 (6.3)	55 (36.4)		
Type of Family				
Nuclear Family	75 (42.5)	89 (58.9)	8.66	0.003
Joint Family	101 (57.4)	62 (41.1)		
No of Children				
None	6 (3.4)	0	12.62	0.006
One	40 (22.7)	53 (35.1)		
Two	42 (23.9)	41 (27.2)		
Three and more	88 (50)	57 (37.7)		
Financial Stability				
Have enough money to meet daily needs	10 (5.7)	7 (4.6)	4.54	0.1
Need additional support to meet needs	44 (25)	24 (15.9)		
Struggling to meet daily needs	122 (69.3)	120 (79.5)		

Speaking with children				
Not speaking	6 (3.4)	0	73.38	0.000
Once in a week	105 (59.7)	31 (20.5)		
Twice in a week	54 (30.7)	69 (45.7)		
Once in a month	10 (5.7)	37 (24.5)		
Rarely	1 (0.6)	14 (9.3)		
Current Health				
Excellent	2 (1.1)	29 (19.2)	30.94	0.000
Good	43 (24.4)	30 (19.9)		
Fair	48 (27.3)	33 (21.9)		
Poor	83 (47.2)	59 (39.1)		
Family support				
Excellent	14 (8)	28 (18.5)	20.58	0.000
Good	86 (48.9)	66 (43.7)		
Fair	37 (21)	45 (29.8)		
Poor	39 (22.2)	12 (7.9)		
Social support				
Excellent	3 (4.6)	62 (41.1)	122.9	0.000
Good	72 (40.9)	54 (35.8)		
Fair	33 (18.8)	35 (23.2)		
Poor	68 (38.6)	0		
Leisure time activity				
Watching TV	78 (44.3)	59 (39.1)	2.76	0.43
Gardening	25 (14.2)	31 (20.5)		
Reading Newspaper/ Books	43 (24.4)	33 (21.9)		
Any other	30 (17)	28 (18.5)		
Rapport with neighbours				
Almost every day	5 (2.8)	18 (11.9)	62.29	0.000
Often	15 (8.5)	48 (31.8)		
Sometimes	81 (46)	67 (44.4)		
Rarely	25 (14.2)	11 (7.3)		
Never	50 (28.4)	7 (4.6)		

The presented data in the table represents the cross-sectional analysis of various factors and their association with depression among older adults. This analysis aims to deliver insights into how variables are related to the prevalence of depression. The Chi-square statistic ($\chi 2$) and p-values have been calculated to assess the significance of these associations.

The analysis shows that gender is significantly associated with depression ($\chi 2 = 6.07$, $p = 0.014$), with a higher percentage of women (59.2%) reporting depression compared to men (45.2%). This suggests that gender plays a significant role in influencing the prevalence of depression within the studied population.

The age-related variables reveal a strong association between age and depression ($\chi 2 = 23.76$, $p = 0.000$). The prevalence of depression increases with age, with the highest rates among older adults aged 60-70 (54.5%), followed by those in the 71-80 age group (34.1%). A smaller percentage of individuals aged 81-90 (8.5%) reported depression, and the prevalence was lowest among those aged 91-100 (2.8%). This suggests that age is a significant factor influencing the likelihood of experiencing depression among older adults.

The analysis of marital status indicates that there is no statistically significant association between marital status and depression ($\chi 2 = 2.42$, $p = 0.12$). Among the married individuals, 58.5% reported depression, while among widow/widower individuals, 41.5% reported depression. This suggests that marital status does not appear to be a strong determining factor for the prevalence of depression within the subject.

The analysis of education levels demonstrates a significant association between education and depression ($\chi 2 = 32.78$, $p = 0.000$). Among individuals with no formal education, 58.5% reported experiencing depression, while 55% reported no depression. In primary education/secondary education, 34.1% reported depression, and 15.9% reported no depression. For those with a high school education, 5.7% reported depression, and 21.2% reported no depression. Lastly, among individuals with college/university education, 1.7% reported depression, and 7.9% reported no depression. This analysis indicates that education level is significantly associated with

the prevalence of depression, with lower education levels correlating with higher rates of depression within the studied population.

The results of the religious relationship reveal that there is no statistically significant association between religion and depression ($\chi2 = 0.26$, $p = 0.87$). Among individuals who identify as Hindu, 63.6% reported experiencing depression, while 66.2% reported no depression. For those who identify as Christian, 21.6% reported depression, and 20.59% reported no depression. Among Muslim individuals, 14.8% reported depression, and 13.2% reported no depression. This suggests that, within the studied population, religion does not appear to be a significant determinant of depression, as the differences in depression rates between the religious groups are not statistically significant.

The analysis of income sources reveals a statistically significant association between income and depression ($\chi2 = 80.11$, $p = 0.000$). Among individuals depending on government pensions, 10.8% reported experiencing depression, while 22.5% reported no depression. In the case of those supported by their children (sons), 58.5% reported depression, and only 16.6% reported no depression. Among individuals supported by their daughters, 24.4% reported depression, and 24.5% reported no depression. For those relying on their own income or their spouse's income, 6.3% reported depression, and 36.4% reported no depression. This significant result indicates that the source of income significantly effects the prevalence of depression within the studied population.

The analysis of family types discloses a statistically significant between the type of family and depression ($\chi2 = 8.66$, $p = 0.003$). Among individuals in nuclear families, 42.5% reported experiencing depression, while 58.9% reported no depression. In contrast, among those in joint families, 57.4% reported depression, and 41.1% reported

no depression. This suggests that the type of family structure significantly influences the prevalence of depression within the studied population, with individuals in joint families more likely to report depression compared to those in nuclear families.

The analysis of the number of children within a family reveals a significant association between the number of children and depression ($\chi2 = 12.62$, $p = 0.006$). Among individuals with no children, 3.4% reported experiencing depression, while none reported no depression. For those with one child, 22.7% reported depression, and 35.1% reported no depression. Among those with two children, 23.9% reported depression, and 27.2% reported no depression. Individuals with three or more children had the highest prevalence of depression, with 50% reporting depression and 37.7% reporting no depression. This suggests that the number of children in a household significantly influences the prevalence of depression within the studied population, with higher numbers of children associated with a higher likelihood of reporting depression.

The analysis of financial stability indicates that there is no statistically significant association between financial stability and depression ($\chi2 = 4.54$, $p = 0.1$). Among individuals who reported having enough money to meet their daily needs, 5.7% reported experiencing depression, while 4.6% reported no depression. For those who needed additional support to meet their needs, 25% reported depression, and 15.9% reported no depression. Older adults struggling to meet their daily needs had a higher prevalence of depression, with 69.3% reporting depression and 79.5% reporting no depression.

The analysis of speaking with the children underscores a highly significant association between communication patterns and depression ($\chi2 = 73.38$, $p = 0.000$). Among individuals who reported not speaking with their children, 3.4% reported

experiencing depression, while none reported no depression. For those who communicated once a week, 59.7% reported depression, and 20.5% reported no depression. Among those who communicated twice a week, 30.7% reported depression, and 45.7% reported no depression. For individuals who communicated once a month, 5.7% reported depression, and 24.5% reported no depression. Finally, those who communicated rarely had a very low prevalence of depression, with 0.6% reporting depression and 9.3% reporting no depression. This analysis highlights that the frequency of communication with children significantly influences the prevalence of depression within the studied population.

The results of the current health status of older adults reveal a highly significant association between health and depression ($\chi2 = 30.94$, $p = 0.000$). Among individuals reporting excellent health, only 1.1% reported experiencing depression, while 19.2% reported no depression. For those in good health, 24.4% reported depression, and 19.9% reported no depression. Similarly, among those with fair health, 27.3% reported depression, and 21.9% reported no depression. In contrast, individuals with poor health had the highest prevalence of depression, with 47.2% reporting depression and 39.1% reporting no depression. This analysis highlights that the current health status significantly influences the prevalence of depression within the participants.

The analysis of family support levels indicates a highly significant association between family support and depression ($\chi2 = 20.58$, $p = 0.000$). Among older adults who reported excellent family support, 8% reported experiencing depression, while 18.5% reported no depression. For those with good family support, 48.9% reported depression, and 43.7% reported no depression. Similarly, among those with fair family support, 21% reported depression, and 29.8% reported no depression. In contrast, individuals with poor family support had the highest prevalence of depression, with

22.2% reporting depression and 7.9% reporting no depression. This investigation highlights that the level of family support significantly influences the prevalence of depression within the studied population.

The analysis of social support reports an extremely significant association between social support and depression ($\chi2 = 122.9$, $p = 0.000$). Among individuals who reported excellent social support, only 4.6% reported experiencing depression, while 41.1% reported no depression. For those with good social support, 40.9% reported depression, and 35.8% reported no depression. Similarly, among those with fair social support, 18.8% reported depression, and 23.2% reported no depression. In contrast, individuals with poor social support had the highest prevalence of depression, with 38.6% reporting depression and no one reporting no depression. This analysis stresses that the level of social support significantly influences the prevalence of depression within the subjects.

The analysis of leisure time activities exposes that there is no statistically significant association between leisure activities and depression ($\chi2 = 2.76$, $p = 0.43$). Among individuals who reported watching TV as their leisure activity, 44.3% reported experiencing depression, while 39.1% reported no depression. For those engaged in gardening, 14.2% reported depression, and 20.5% reported no depression. Similarly, among those who spent their leisure time reading newspapers/books, 24.4% reported depression, and 21.9% reported no depression. Those involved in other leisure activities had 17% reporting depression and 18.5% reporting no depression. This suggests that the choice of leisure time activity does not appear to have a significant influence on the prevalence of depression within the studied population.

With regards to the rapport with neighbours, the analysis noted a highly significant association between neighbourly interactions and depression ($\chi2 = 62.29$, p

= 0.000). Among individuals who reported interacting with their neighbours almost every day, only 2.8% reported experiencing depression, while 11.9% reported no depression. For those who often interacted with neighbour, 8.5% reported depression, and 31.8% reported no depression. Similarly, among those who sometimes interacted with neighbours, 46% reported depression, and 44.4% reported no depression. In contrast, individuals who rarely interacted with neighbours had 14.2% reporting depression, and 7.3% reported no depression. Those who reported never interacting with neighbours had the highest prevalence of depression, with 28.4% reporting depression and 4.6% reporting no depression. The results pointed out that the frequency of interactions with neighbours significantly influences the prevalence of depression within the studied population, with more frequent interactions associated with a lower likelihood of experiencing depression.

In summary, this analysis discloses some key factors associated with depression. Gender significantly impacts depression rates, with females undergoing a higher prevalence. Age is another leading factor, with older individuals reporting lower rates of depression. Education, income source, family structure, and the number of children in a household all exhibit considerable associations with depression. Effective communication with children and strong social support networks correlates with depression rates. Additionally, current health status plays a vital role, with better health linked to lower depression levels. These findings highlight the multifaceted nature of depression's determinants and underscore the importance of tailored interventions to address these factors and promote mental well-being. It is important to note that these significant findings can provide valuable insights for interventions and support strategies aimed at reducing the prevalence of depression in the studied population.

Table 9. Correlation analysis between CI, depression and QoL among older adults

Correlations				
		MMSE	GDS	QoL
CI	r	1	.935**	-.476**
	p		0.000	0.000
Depression	r		1	-.429**
	p			0.000
QoL	r			1
	p			

The data presented in the above table revealed that there is a strong positive relationship between Cognitive impairment and depression among older adults. As cognitive impairment increases, depression tends to increase as well. There is a moderate negative relationship between Cognitive impairment and quality of life. As Cognitive impairment increases, Quality of life tends to decrease to some extent. There is a moderate negative relationship between depression and quality of life. As depression increases, quality of life tends to decrease. The findings of this study may have implications for healthcare and social support services in rural areas, potentially leading to targeted interventions aimed at improving the well-being of rural older adults.

Phase Two Study Results

In this phase, the data was presented for the fourth objective and data were analyzed and reported under nine major sections as provided here below:

- Section 1: Description of sample characteristics
- Section1.1: Description of demographic variables between groups
- Section 2: Homogeneity comparison of outcome measures between the experimental and Control group
- Section 3: Description of Cognitive impairment scores between experimental and control groups
- Section 3.1: Description of pre-test scores of Cognitive impairments between groups
- Section 3.2: Comparison of pre-test and post-test scores of cognitive impairments between experimental and control groups.
- Section 4:Description of depression scores between experimental and control group
- Section 4.1: Distribution of pre-test scores of depression scores between experimental and control groups

- Section 4.2: Comparison of pre-test and post-test scores of Geriatric depression between experimental and control groups.
- Section 5: Description of quality-of-life scores between experimental and control group
- Section 5.1: Distribution of pre-test scores of quality of life between experimental and control groups
- Section 5.2: Comparison of pre-test and post-test scores of Quality of life between experimental and control groups.
- Section 6:Effectiveness of group reminiscence on Cognitive impairment
- Section 7:Effectiveness of group reminiscence on Depression
- Section 8:Effectiveness of group reminiscence on Quality of life
- Section 9:Six Months Follow-up Analysis

Section 1: Description of sample characteristics

In this section, the frequency and percentage distribution of the study participants (n=130) were discussed.

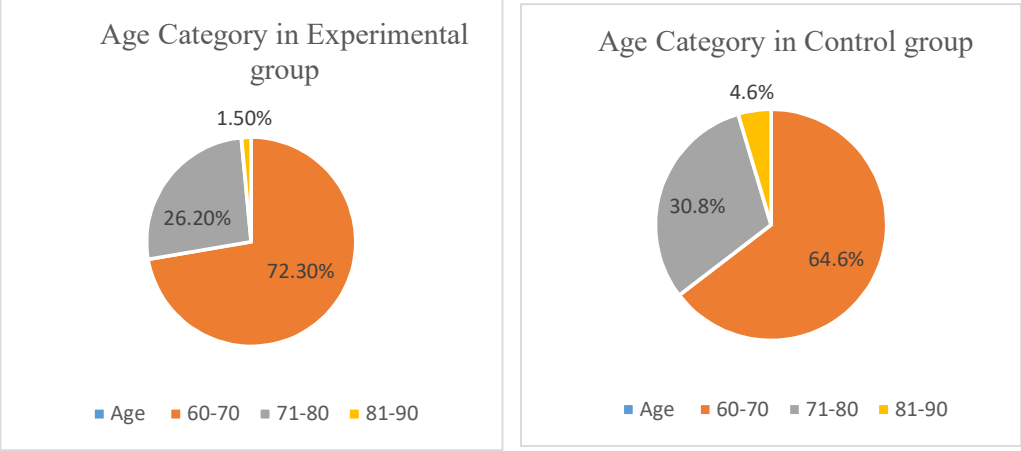
Table 10 Frequency and Percentage distribution of demographic variables

N=130

Demographic Variables	Experimental group		Control group		$\chi 2$	P
	f	%	f	%		
Age (Mean and SD)	68.31 ± 574		68.88 ± 6.47			
60-70	47	72.3	42	64.6	1.524	0.467
71-80	17	26.2	20	30.8		
81-90	1	1.5	3	4.6		
Gender					0.141	0.708
Male	20	30.8	22	33.8		
Female	45	69.2	43	66.2		
Marital Status					0.313	0.576
Married	42	64.6	45	69.2		
Widowed	23	35.4	20	30.8		
Education					5.598	1.33
No formal Education	24	36.9	36	55.4		
Primary/Secondary Education	36	55.4	23	35.4		
College Education	4	6.2	4	6.2		
Higher Education	1	1.5	2	3.1		
Religion					0.556	0.757
Hindu	40	61.5	44	67.7		
Christian	15	23.1	13	20		
Muslim	10	15.4	8	12.3		
Income Support					0.82	0.664
Government Pension	7	10.8	10	15.4		

Son	41	63.1	41	63.1		
Daughter	17	26.2	14	21.5		
Type of family					0.137	0.711
Nuclear Family	23	35.4	21	32.3		
Joint Family	42	64.6	44	67.7		
No. of Children					1.536	0.674
None	3	4.6	3	4.6		
One	17	26.2	14	21.5		
Two	8	12.3	13	20		
Three and above	37	56.9	35	53.9		
Financial Stability					0.144	0.931
Have enough money to meet daily needs	5	7.7	5	7.7		
Need additional support to meet needs	21	32.3	23	35.4		
Struggling to meet daily needs	39	60	37	56.9		
Speaking with Children					10.56	0.015*
Not speaking	3	4.6	3	4.6		
Once in a Week	32	49.2	49	75.4		
Once in a Twice	26	40	12	18.5		
Once in a Month	4	6.2	1	1.5		
Current health					0.955	0.62
Good	21	32.3	17	26.2		
Fair	22	33.8	21	32.3		
Poor	22	33.8	27	41.5		
Family Support					1.489	0.475
Good	37	56.9	35	53.8		
Fair	8	12.3	13	20		
Poor	20	30.8	17	26.2		
Social Support					0.649	0.723
Good	26	40	24	36.9		
Poor	7	10.8	5	7.7		
Fair	32	49.2	36	55.4		
Leisure time activity					1.679	0.642
Watching TV	28	43.1	32	49.2		
Gardening	6	9.2	3	4.6		
Reading paper/Books	21	32.3	18	27.7		
Any other	10	15.4	12	18.5		
Rapport with neighbour					2.2	0.699
Almost every day	3	4.6	1	1.5		
Often	6	9.2	4	6.2		
Sometimes	23	35.4	23	35.4		
Rarely	8	12.3	12	18.5		
Never	28	38.5	25	38.5		

The data presented in Table 13 provides information on the demographic characteristics of the experimental and control groups. The mean age of the experimental group was 68.31±5.74, while the control group had a mean age of 68.88±6.47. In the experimental group, 47 (72.3%) were in the age group between 60 to 70, 17 (26.2%) were in the age group between 71 to 80 and 1 (1.5%) were in the 81 to 90. Where as in the control group, 42 (64.6%) were in the age group of 60 to 70, 20 (30.8%) were in the 71 to 80 and 3 (4.6%) in the age group of 81 to 90. The above data presented in the figure 10 and 11



Figures 10 and 11. Percentage distribution of Age of the Study participants in the experimental and control group

With regards to the gender in the experimental group, 45 (69.2%) belonged to the female gender, and 20 (30.8%) were male. As in the control group, 43 belong to the female gender, and 22 belong to the male gender. The data is presented in Figure 12.

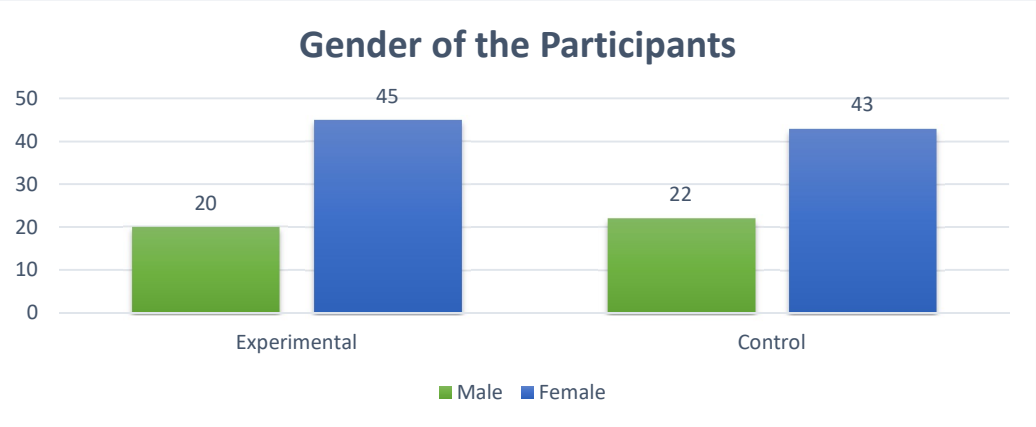


Fig 12. Distribution of the Gender of the participants in experimental and control groups.

With regards to the marital status of the study participants in the experimental group, 42 were married (30.8%), and 23 (35.4) were widows/widowers. Whereas in a control group, 45 (69.2%) were in a married group and 20 (30.8%) in widow/widower group. The data is presented in figure 13.

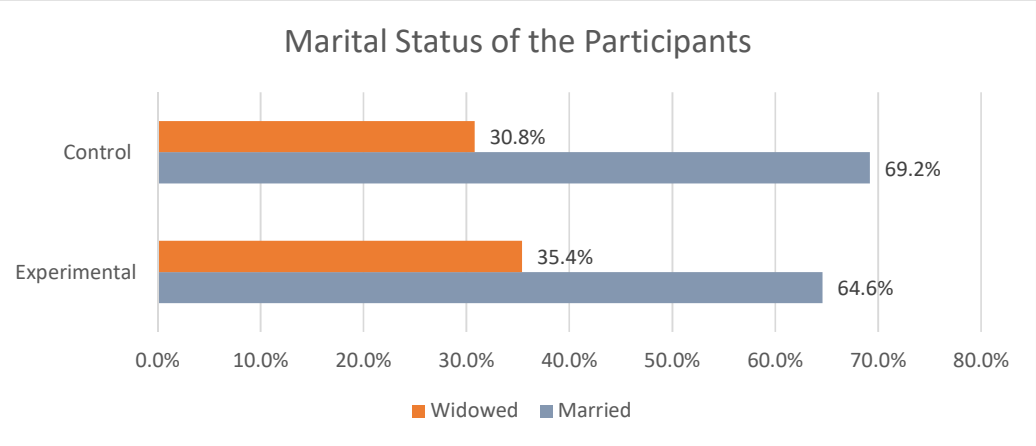


Figure 13. Percent distribution of the marital status of the participants in the experimental and control groups.

With regards to the education of the older adults in the experimental group, 35 (55.4%) had primary education, 24 (36.9%) had no formal education, 4 (6.2%) had a degree and 1 (1.5%) had higher education. In the control group, 36 (55.4%) had no formal education, 23 (35.4) had formal education, 4 (6.2%) had a degree and 2 (3.1) had higher education. The data is presented in Figure 14.

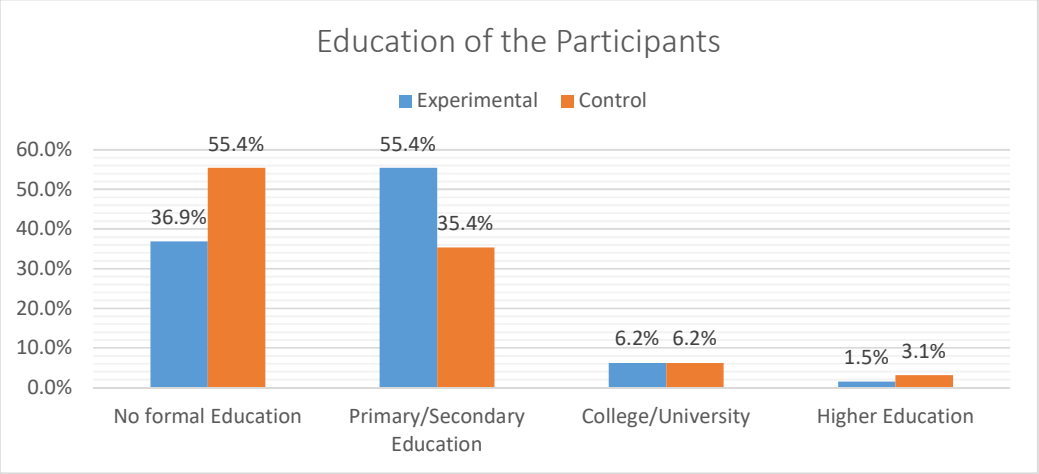


Figure 14 Percentage Distribution of Education of the participants in the experimental and control group.

As per the religion of the older adults in the experimental group, 40 (61.5%) were Hindus, 15 (23.1) belonged to the Christian religion, and 10 (15.4%) were Muslims. In the control group, 44 (67.7%) were Hindus, 13 (20%) were Christian and 8 (12.3%) were Muslims. The above data presented in Figure 15

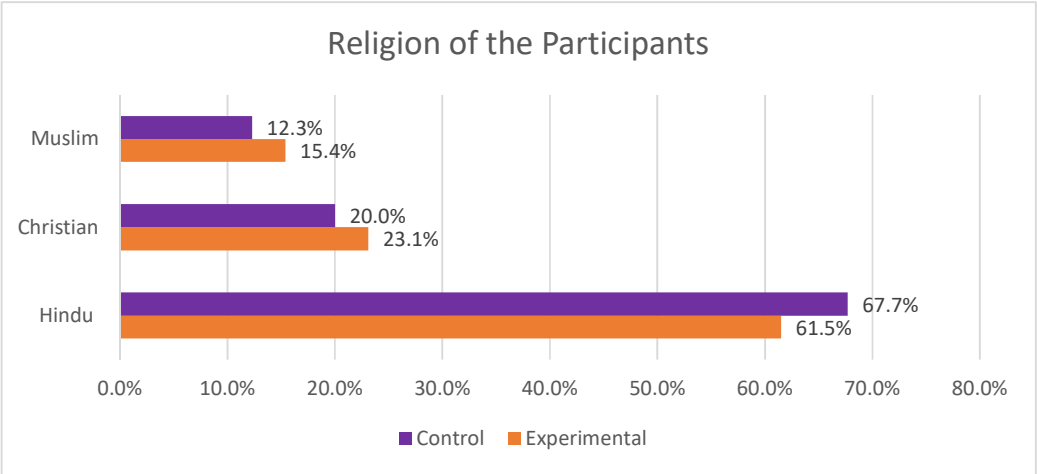


Figure 15. Percentage Distribution of Religion of the participants in the experimental and control group.

Income of the older adults in the experimental group, 41 (63.1%) were supported by their sons, 17 (26.2%) were supported by their daughters, and government pension holders were 7 (10.8%), respectively. In the control group, 41 (63.1%) were

helped by their sons, 14 (21.5%) were helped by their daughters, and 10 (15.4%) were pension holders. The above data presented in the figure 16

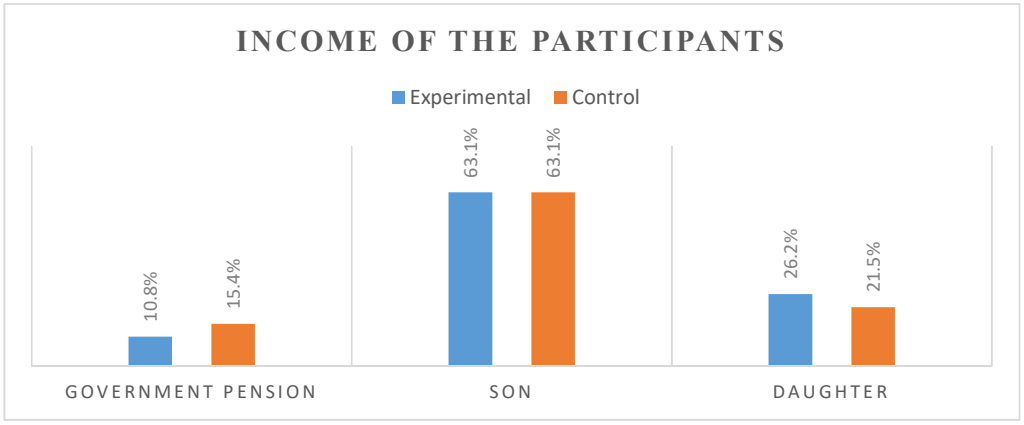


Figure 16. Percentage Distribution Income of the participants in the experimental and control groups.

Regarding the type of family of the study participants, the experimental group joint families were 42 (64.6), and 23 (35.4) were nuclear families. Where as in the control group, 44 (67.7%) were living as joint family and 21 (32.3%) were in the nuclear family. The above data presented in Figure 17

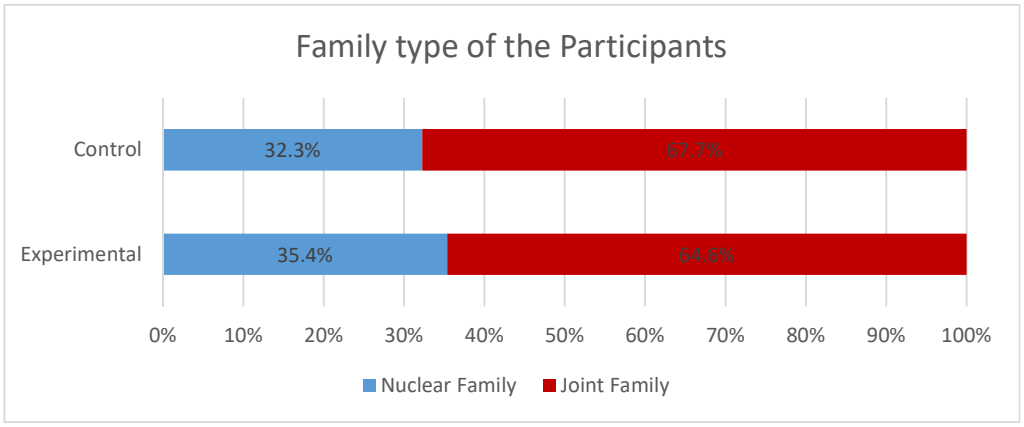


Figure 17. Percentage distribution family type of the participants in the experimental and control group.

Regarding the number of children, in the experimental group, 37 (56.9%) older adults gave birth to three and above children, 17 (26.2) had two children, 17 (26.2%) had one child, and 3 (4.6%) did not have children. Whereas in the control group, 35

(53.9%) had three and above children, 14 (21.5%) had one child, 13 (20%) were having two children, and 3 (4.6%) were not having the children (Fig.18)

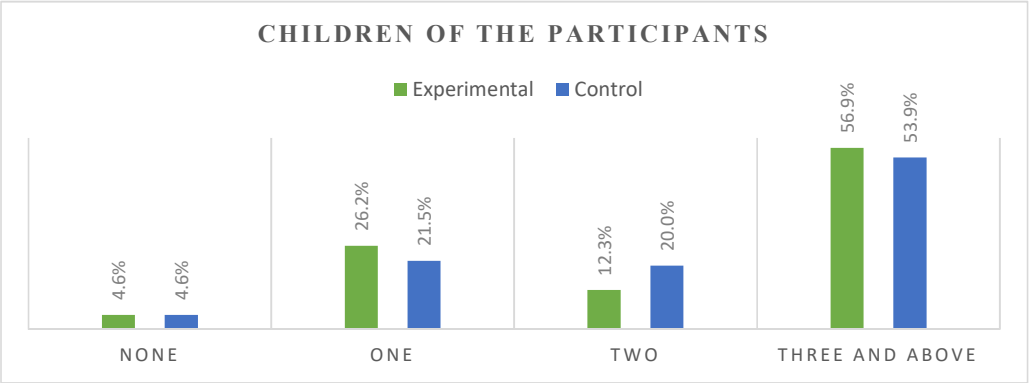


Figure 18. Percentage Distribution no of children the participants in the experimental and control

With regards to the financial status of the older adults in our experimental study, 39 (60%) of the participants were financially depended, 21 (32.3%) needed additional support to fulfil their daily needs, and 5 (7.7%) had enough money to manage their daily needs. In the experimental group, 37 (56.9%) were completely dependent on their family for their daily needs, 23 (35.4%) reported that they needed additional support and 5 (7.7%) reported they had enough money to manage them. (Fig.19)

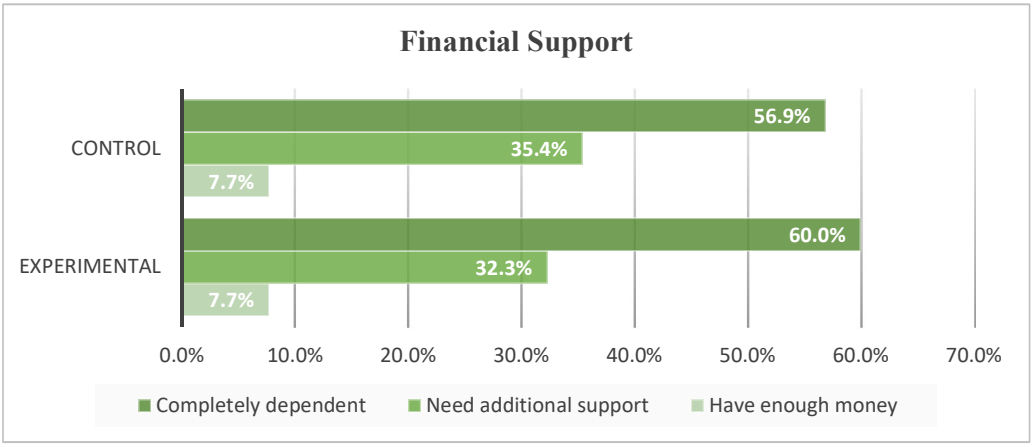


Figure 19. Percentage distribution of Financial Support of the participants in the experimental and control group.

Data regarding the Communication with their children in the experimental group, 32 (49.2%) were speaking with their children for once in a week, 26 (40%) were twice in a week, 4 (6.2) were once in a month, and 3 (4.6%) were not speaking as they did not have children. In the control group, 49 (75.4%) were speaking with their children once a week, 12 (18.5%) were twice a week, 4 (6.2%) were once a month, and 3 (4.6%) were not speaking as they were not having children. The above data is presented in the figure 20.

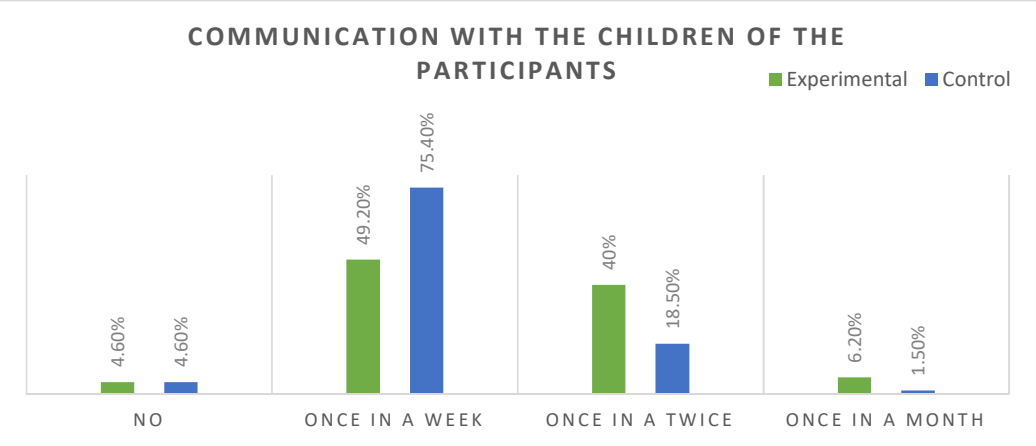


Figure 20. Percentage Distribution of Communication with the children of the participants in the Experimental and control group.

Of participants in the experimental group, 22 (33.8%) reported that their health was fair and poor, and 21 (32.8%) reported that their health was good. In the control group, 27 (41.5) reported poor health, 21 (32.3) older adults reported fair health, and 17 (26.2%) reported hood health. Figure 21 shows the data presentation.

As per family support to older adults in the experimental group, 37 (56.9%) reported good support, 20 (30.8%) reported poor support from family and 8 (12.3) reported fair family support. In the control group, 35 (53.8%) reported that the support from family was good, 17 (26.2%) reported poor, and 13 (20%) were receiving fair family support. (Fig 22)

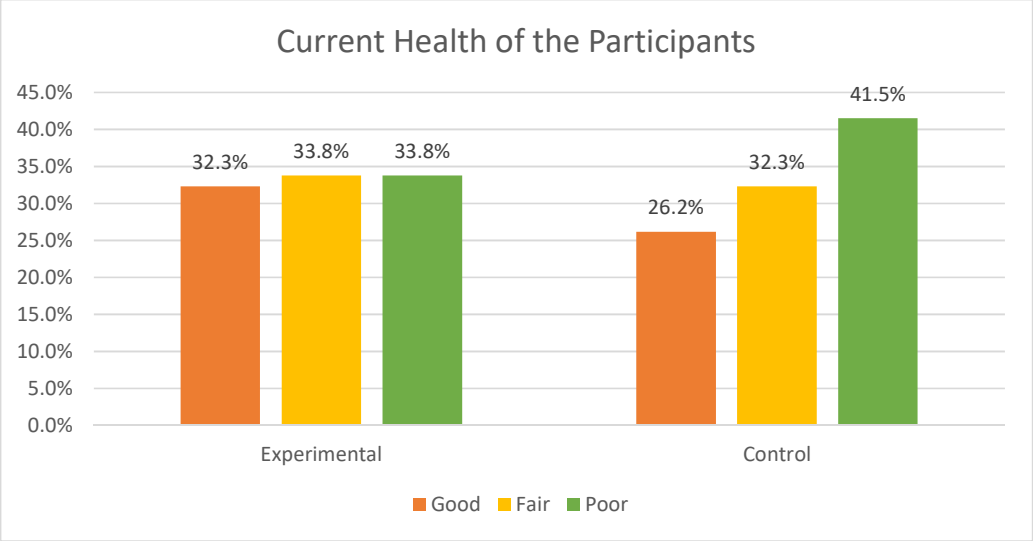


Figure 21. Percentage distribution of current health of the participants in the experimental and control groups.

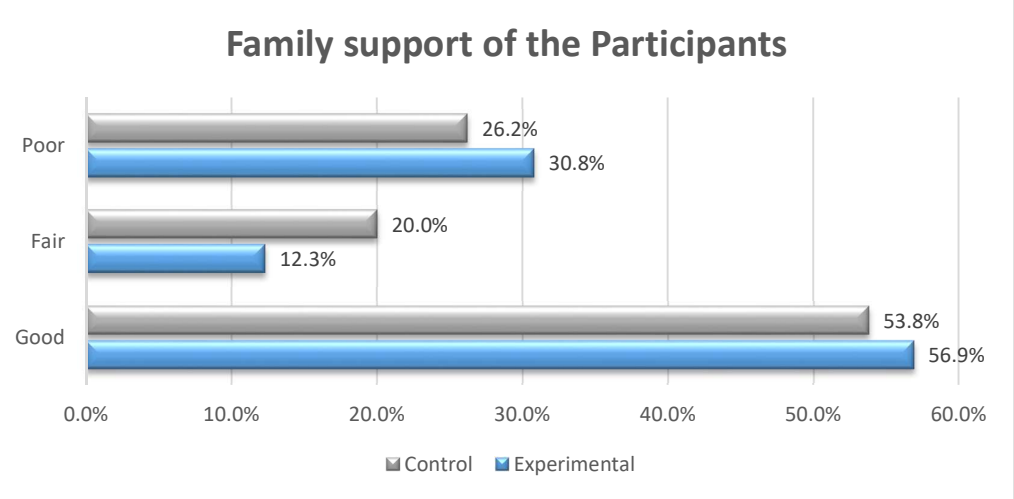


Figure 22. Percentage distribution of family support of the participants in the experimental and control groups.

With regards to social support, in the experimental group, 32 (49.2%) had poor social support, 26 (40) had good social support, and 7 (10.8) had fair social support. In the experimental group, 36 (55.4%) had poor social support, 24 (36.9%) had good social support, and 5 (7.7%) had fair social support. The above data is presented in the figure 23.

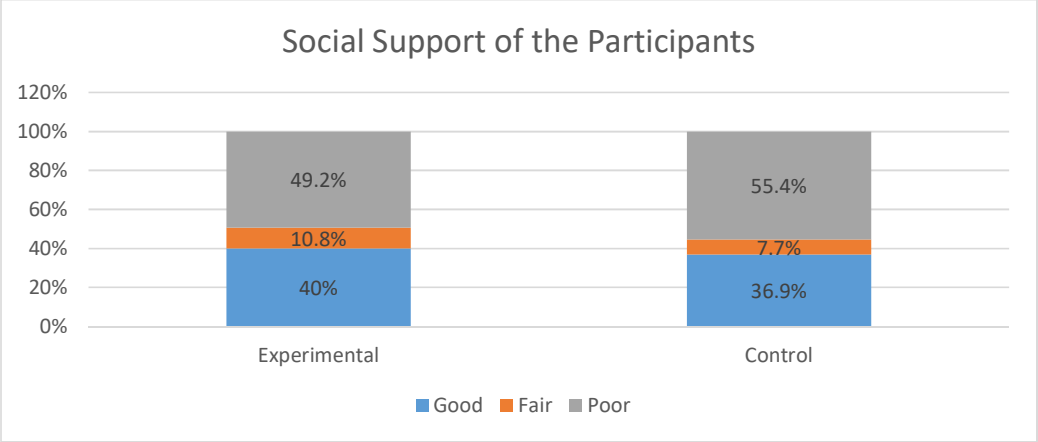


Figure 23. Percentage distribution of social support of the participants in the experimental and control groups.

As per the leisure time activity in the experimental group, 28 (43.1%) subjects were watching TV, 21 (32.3%) subjects were reading papers and books, 6 (9.2%) subjects were gardening, and 10 (15.4%) subjects were any other. In the control group, 32 (49.2%) were watching TV during their leisure time activity, 18 (27.7%) were reading newspapers and books, 12 (18.5%) were spending their time gardening, and 12 (18.5%) were doing any other. Figure 24 shows a graphical presentation of the data.

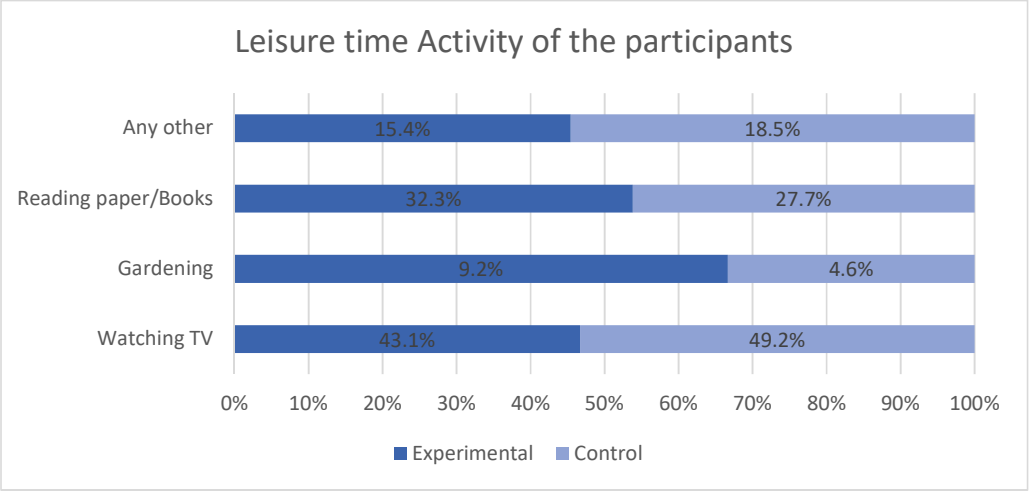


Figure 23. Percentage distribution of Leisure time activity of the participants in the experimental and control group.

As per the data regarding how frequently they had a rapport with their neighbour. In the experimental group, 41 (63.1%) reported that they had rapport with the neighbour sometimes only, 13 (20%) had often, 5 (7.7%) had almost every and rarely, and 1 (1.5%) reported that they never had rapport with anyone. In the control group, 42 (64.6%) reported sometimes, 11 (16.9%) often, 9 (13.8) rarely, and 3 (4.6%) reported that almost every day they had rapport with their neighbourhood. Figure 24 shows the graphical presentations.

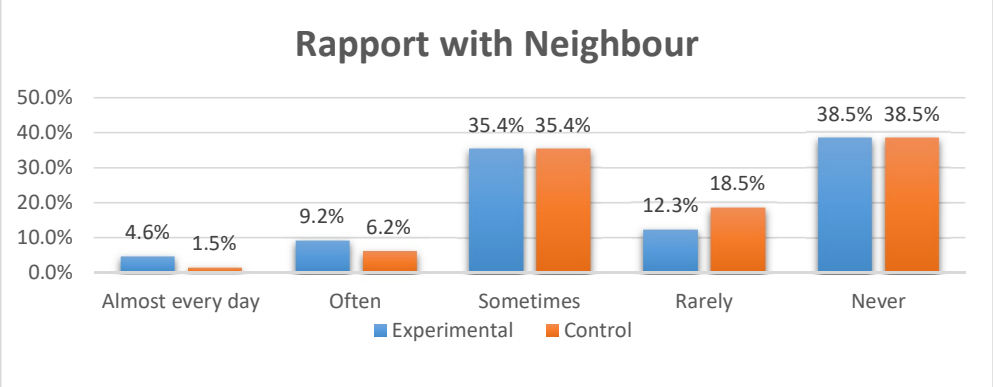


Figure 25. Percentage distribution of rapport with neighbours of the participants

The above data information on the demographic variables of an experimental group and control group, with each group consisting of 65 participants. The mean and standard deviation of age were provided. The gender, marital status, education, religion, income, type of family, number of children, financial status, current health, family support, social support, leisure time activity, and rapport with family were also listed for both groups, along with the frequency and percentage of participants in each category.

On applying chi-square, the association between control and experimental group was found to be non-significant in all demographic variables such as age, gender, marital status, education, religion, income, type of family, number of children, financial status, current health, family support, social support, leisure time activity, and Communication with family. Only significant difference was found in speaking their children.

Section-2 Homogeneity comparison of outcome measures between the experimental and control group

The pre-test values for all outcome variables were compared between the experimental and control groups to check whether the group differed at the pre-test. For comparison of outcome variables between two groups, data normality was checked using Kolmogorov-Smirnov test. Since the data were not following normality, Mann Whitney U test was conducted in order to check the equality of variance between the two groups.

Table 11. Mean, Standard Deviation and Homogeneity Comparison of Outcome Variables at Baseline *N=130*

Outcome Measure	**Experimental group (n=65)**		**Control Group (n=65)**		**Z**	**p**
	Mean	SD	Mean	SD		
MMSE	19.83	1.4	19.45	1.23	-1.586	0.113
GDS	6.95	0.85	7.02	0.89	-0.398	0.691
Quality of Life	51.42	12.16	50.31	12.08	-0.270	0.787

The data presented in the table shows that outcome measures Such as Mini Mental Status Examination (Z= -1.586 p=0.113), Geriatric depression (Z=-0.398 P=0.691) and Quality of Life (Z= -0.270 P=0.787) were statistically not significant between experimental and control group at pre-test, so it can be interpreted that two groups did not differ significantly at pre-test.

Section 3- Description of Cognitive impairment scores between experimental and control group

The section describes the distribution of Mini-mental status examination at the pre-test and post-test between the experimental and control groups. The mean and standard deviation of score is presented in Tables 12 and 13

Table 12. Distribution of pre-test mean scores of Cognitive impairment between experimental and control group *N=130*

Outcome Variables	**Experimental group**		**Control Group**	
	Mean	SD	Mean	SD
MMSE	19.83	1.41	19.45	1.24

The above table reports that the mean score of MMSE among older adults at the time of pre-test in the experimental group and control group were 19.83±1.41 and 19.45±1.24 respectively.

Table 13. Comparison of pre and post-test mean scores of Cognitive impairment between experimental and control groups N=130

Outcome Variables	Experimental group		Control Group	
	Mean	SD	Mean	SD
Pre-test	19.83	1.41	19.45	1.24
Post-test	20.62	1.52	19.31	1.16

Data presented in Table 13 shows that there was an improvement in MMSE mean scores in the experimental group (19.83±1.41; 20.62±1.52) compared to the control group (19.45±1.24; 19.31±1.16) in the post-intervention period.

Section-4. Description of geriatric depression sores between experimental and control group

This section describes the distribution of Geriatric depression scale scores at pre-test and post-test between the experimental and control group anxiety scores at the time of admission, just before undergoing breast surgery. The Mean and Standard Deviation of depression scores are presented in Table 14

Table 14. Distribution of pre-test mean scores of Depression between experimental and control group N=130

Outcome variables	Experimental group		Control Group	
	Mean	SD	Mean	SD
GDS	6.95	0.85	7.02	0.89

The above tables show that the mean and standard deviation of geriatric depression scores among older adults in both the experimental and control groups were 6.95±0.85 and 7.02±0.89.

Table 15. Comparison of pre and post-test mean scores of Depression between experimental and control groups N=130

GDS	Experimental group		Control Group	
	Mean	**SD**	**Mean**	**SD**
Pre-test	6.95	0.85	7.02	0.89
Post-test	-5.69	0.71	7.03	0.86

Data presented in Table 15 shows that the geriatric mean score in the experimental group's geriatric depression mean score at the time of the pre-test was 6.95. After 12 weeks of group reminiscence intervention, the experimental mean score was -5.69; hence, the experimental group reported a reduction in depression. In the control group, the geriatric depression mean score at the pre-test was 7.02, at the end of the intervention, the mean score was 7.03. Hence no changes occurred in the depression among the older adults.

Section-5. Description of Quality-of-Life scores between experimental and control group

The quality-of-life scale has four domains: Physical health domain, Psychological Domain, Psychological Domain, Social Relationship Domain, and Environment Domain subscale. Mean and standard deviation was calculated and compared at pre-test and post-test among experimental and control group. Data is shown in the following table.

Table 16. Distribution of pre-test mean scores of Quality of life between experimental and control group N=130

Quality of Life	Experimental		Control	
Domains	**Mean**	**SD**	**Mean**	**SD**
Over all Qol	1.49	0.5	1.52	0.5
General Health	1.69	0.83	1.91	1.09
Physical Health Domain	25.34	15.62	23.55	14.73
Psychological Domain	22.17	12.97	21.25	12.12
Social Relationship Domain	25.74	16.23	26.32	15.91
Environment Domain	32.38	10.71	30.52	10.3

The table 16 displays the mean and standard deviation of pre-test scores related to the quality of life among older adults in both the experimental and control groups. The Overall Quality of life mean score was 1.49±0.5 in the experimental group and 1.52±0.5 in the control group. The General Health mean score was 1.69±0.83 in the experimental group and 1.91±1.09 in the control group. The Physical Health Domain mean score was 25.35±15.62 in the experimental group and 323.55±14.73 in the control group. The Psychological Domain mean score was 22.17±12.97 in the experimental group and 21.25±12.12 in the control group. The Social Relationship Domain mean score was 25.74±16.23 in the experimental group and 26.32±15.91 in the control group. Lastly, the Environment Domain mean score was 32.38±10.71 in the experimental group and 30.52±10.37 in the control group.

Table 17. Comparison of pre and post-test scores of Quality of Life between experimental and control groups *N=130*

Quality of Life	**Experimental Group**		**Control Group**	
Domains	**Mean**	**SD**	**Mean**	**SD**
Over all QoL				
Pre-test	1.49	0.5	1.52	0.5
Post-Test	1.78	0.67	1.48	0.5
General Health				
Pre-test	1.69	0.83	1.91	1.09
Post-Test	1.97	0.83	1.88	1.05
Physical Health Domain				
Pre-test	25.34	15.62	23.55	14.73
Post-Test	28.83	15.82	23.23	15.03
Psychological Domain				
Pre-test	22.17	12.97	21.25	12.12
Post-Test	28	12.02	20.75	12.53
Social Relationship Domain				
Pre-test	25.74	16.23	26.32	15.91
Post-Test	31.58	17.62	25.63	16.62
Environment Domain				
Pre-test	32.38	10.71	30.52	10.3
Post-Test	34.38	10.27	30.25	10.58

The above table 17 shows the comparison of pre and post-test mean scores of quality of life among older adults in the experimental and control groups. After 12 weeks of group reminiscence, the experimental group participants quality of life mean score was improved; Overall quality of life 1.49±0.5; 1.78±0.67), General health (1.69±0.83; 1.97±0.83), Physical Health Domain (25.34±15.62; 28.83±15.82), Psychological Domain (22.17±12.97; 28±12.02), Social relationship Domain (25.74±31.58) and Environmental domain (32.38±34.38; 34.38±10.27) compared to control group; Overall quality of life (1.52±0.5; 1.48±0.5), General health (1.91±1.09; 1.88±0.5), Physical Health Domain (23.55±14.73; 23.23±15.03) Psychological Domain (21.25±12.12; 20.75±15.03), Social Relationship Domain (26.32±15.91; 25.63±16.62) and Environmental Domain (30.52±10.30; 30.25±10.58). It can be noted that there was an improvement in the quality of life scores in the experimental, which could be due to the result of the intervention.

Section-6. Effectiveness of Group Reminiscence on Cognition

This section of the analysis shows how group Reminiscence was effective in improving cognition in older adults. To test the effectiveness of group reminiscence on cognition following hypothesis was formulated

H_1: There will be a positive effect of group reminiscence and cognition.

The data was analysed to see the effectiveness of group reminiscence intervention on cognition among older adults between and with the experimental and control groups. To find out the results, Wilcoxon and Mann-Whitney U tests were conducted.

Table 18. Effectiveness of Group reminiscence on Cognitive impairment in experimental and control groups N=130

MMSE	Pre-Mean (SD)	Post Mean (SD)	Z value	P Value
Experimental group	19.83 (1.41)	20.62 (1.52)	-5.47	0.000
Control group	19.45 (1.24)	19.31 (1.16)	-1.107	0.268

Table 18 presents pre and post-intervention Mini-Mental Status Examination (MMSE) analyses for older adults in both the experimental and control groups. In the experimental group, the pre-intervention MMSE mean score was 19.83 (SD 1.41), which increased to 20.62 (SD 1.52) post-intervention. The Z-value was -5.47, and the P-value was 0.000, indicating a significant improvement. For the control group, the pre-intervention MMSE mean score was 19.45 (SD 1.24), which changed to 19.31 (SD 1.16) post-intervention. The Z-value was -1.107, and the P-value was 0.268, indicating no significant change. These results demonstrate that 12 weeks of group reminiscence therapy had a significant positive effect on the experimental group's cognitive function.

Table 19. Effectiveness of Group reminiscence on Cognitive impairment between the experimental and control groups *N=130*

MMSE	Mean Difference (SD)	*Z* value	*P* value	Effect Size
Experimental	-0.78 (0.82)	-6.174	0.000	0.54
Control	0.14 (0.83)			

In Table 19, the analysis of pre- and post-intervention mean differences in MMSE scores between the experimental and control groups reveals significant findings. The experimental group exhibited a considerable mean difference of -0.78 (SD 0.82), in contrast to the control groups mean difference of 0.14 (SD 0.83). The Z-value of -6.174 and a P-value of 0.000 indicate a statistically significant and large difference in the intervention's effectiveness, with an effect size (r) of 0.54, emphasizing the significance of the result. Thus, the results accept the hypothesis (H_1) and conclude that group reminiscence had a positive effect on cognition. This improvement is recognized to the constant support and follow-up provided by the investigator, highlighting the positive impact of the intervention on cognitive function in the experimental group when compared to the control group.

Section-7. Effectiveness of Group Reminiscence on Geriatric depression

This section of the analysis shows how group Reminiscence was effective in reducing geriatric depression in older adults. To test the effectiveness of group reminiscence on depression following null hypothesis was formulated.

H_2: There will be a positive effect of group reminiscence and Geriatric depression

The data was analysed to see the variation in means scores of pre-test and post-test. To find out the effectiveness, Wilcoxon test for within the group and Mann Whitney for between the groups were performed.

Table 20. Effectiveness of Group reminiscence on Depression in experimental and control groups *N=130*

GDS	Pre Mean (SD)	Post Mean (SD)	Z value	P Value
Experimental group	6.95 (0.86)	5.92 (0.71)	-6.681	0.000
Control group	7.02 (0.89)	7.03 (0.87)	-0.447	0.655

In Table 20, pre and post-intervention analyses of the Geriatric Depression Scale among older adults in both the experimental and control groups are presented. The experimental group had a pre-intervention mean value of 6.95 (SD 0.86), which decreased to 5.92 (SD 0.71) post-intervention, resulting in a significant Z-value of -6.681 (P-value 0.000), indicating a significant reduction in depression. Conversely, the control group exhibited no change, with a pre-intervention mean of 7.02 (SD 0.89) and a post-intervention mean of 7.03 (SD 0.87), resulting in a Z-value of -0.447 (P-value 0.655), indicating no significant difference. These results highlight the effectiveness of 12 weeks of group reminiscence therapy in alleviating depression within the experimental group, and Mann Whitney analysis further supported the significant difference in depression levels between the two groups.

Table 21. Effectiveness of Group reminiscence on Depression between the experimental and control groups *N=130*

GDS	Mean Difference	Z value	P value	Effect Size
Experimental	1.03 (0.64)	-8.809	0.000	0.77
Control	-0.02 (0.28)			

Table 21 displays the pre- and post-intervention mean difference analysis of Geriatric Depression scores between the experimental and control groups. In the experimental group, the mean difference was 1.03 (SD 0.64), while in the control group, it was -0.02 (SD 0.28). The Z-value was -8.809, with a P-value of 0.000, indicating a large and highly significant difference in the intervention's effect, as supported by the effect size (r) of 0.77. These results led to the rejection of the null hypothesis (H02) and the acceptance of the alternative hypothesis, demonstrating that group reminiscence effectively reduced depression among older adults in the experimental group when compared to the control group.

Section-8. Effectiveness of Group Reminiscence on Quality of Life

This section of the analysis shows how group Reminiscence was effective in improving the quality of life in older adults. To test the effectiveness of group reminiscence on Quality of life following null hypothesis was formulated.

H_3: There will be a significant difference between pre- posts in the experimental group related to quality of life.

The data was analysed to see the variation in means scores of pre-test and post-test. To find out the effectiveness, Wilcoxon test for within the group and Mann Whitney for between the groups were performed.

Table 22. Effectiveness of Group reminiscence on Quality of life in experimental and control groups *N=130*

Group	Pre-Mean (SD)	Post Mean (SD)	Z value	p-value
Overall Quality of Life				
Experimental	1.49 (0.5)	1.78 (0.67)	-3.162	0.002
Control	1.52 (0.5)	1.48 (0.5)	-1.732	0.083
General Health				
Experimental	1.69 (0.83)	1.97 (0.83)	-2.714	0.007
Control	1.91 (1.09)	1.88 (1.05)	-1.414	0.157
Physical Health				
Experimental	25.34 (15.62)	28.83 (15.82)	-5.365	0.000
Control	23.55 (14.73)	23.23 (15.03)	-1.732	0.083
Psychological Health				
Experimental	22.17 (12.97)	28 (12.02)	-6.698	0.000
Control	21.25 (12.12)	20.75 (12.53)	-1.841	0.066
Social health				
Experimental	25.74 (16.23)	31.58 (17.62)	-5.97	0.000
Control	26.32 (15.91)	25.63 (16.62)	-1.633	0.102
Environment health				
Experimental	32.38 (10.71)	34.38 (10.27)	-4.177	0.000
Control	30.52 (10.3)	30.25 (10.58)	-1.732	0.083

Table 22 presents pre- and post-intervention analyses of Quality of Life (QoL) among older adults in the experimental and control groups. In the experimental group, there was a significant increase in overall QoL, from a pre-intervention mean of 1.49 to 1.78 post-intervention ($Z = -3.162$, $p = 0.002$). For general health, the pre-intervention mean was 1.69, rising to 1.97 post-intervention ($Z = -2.714$, $p = 0.007$). In the control group, changes were not significant for overall QoL (pre 1.52, post 1.48, $Z = -1.732$, $p = 0.083$) or general health (pre 1.91, post 1.88, $Z = -1.414$, $p = 0.157$). The physical domain of QoL showed improvement in the experimental group (pre 25.34, post 28.83, $Z = -5.365$, $p = 0.000$) compared to the control group (pre 23.55, post 23.23, $Z = -1.732$, $p = 0.083$). The psychological domain also improved significantly in the experimental group (pre 22.17, post 28, $Z = -6.968$, $p = 0.000$) compared to the control group (pre 21.25, post 20.75, $Z = -1.841$, $p = 0.07$). Similarly, the social domain showed improvement in the experimental group (pre-25.74, post 31.58, $Z = -5.97$, $p = 0.000$), while the control

group saw minor changes (pre-26.75, post 25.63, Z = -1.633, p = 0.102). In the environmental domain, the experimental group improved (pre-32.38, post 34.38, Z = -1.732, p = 0.083) compared to the control group (pre-30.52, post 30.25, Z = -1.732, p = 0.083). Overall, group reminiscence significantly improved QoL among older adults in the experimental group compared to the control group.

Table 23. Effectiveness of Group reminiscence on Quality of life between the experimental and control groups *N=130*

QoL- Domains	Mean Difference	*Z* value	*P* value	Effect size
Physical				
Experimental	3.49 (3.35)	-6.88	0.000	0.6
Control	1.58 (-1.48)			
Psychological				
Experimental	-5.83 (2.65)	-9.418	0.000	0.82
Control	0.49 (2.07)			
Social				
Experimental	-5.85 (4.92)	-7.802	0.000	0.68
Control	0.69 (3.40)			
Environmental				
Experimental	-2.00 (3.14)	-5.034	0.000	0.44
Control	0.28 (1.26)			

Table 23 presents the pre- and post-intervention mean difference analysis of Quality of Life (QoL) domain scores for the experimental and control groups. In the Physical Domain, the experimental group demonstrated a mean difference of 3.49 (SD 3.35), whereas the control group had a mean difference of 1.58 (SD -1.48). This is a highly significant Z-value of -6.88 (P-value 0.000) and a large effect size (r) of 0.77, indicating a significant intervention effect. In the Psychological Domain, the experimental group showed a mean difference of -5.83 (SD 2.65), while the control group had a mean difference of 0.49 (SD). This resulted in a highly significant Z-value of -9.418 (P-value 0.000). The Social Domain exhibited a mean difference of -5.85 (SD 4.92) in the experimental group, with a Z-value of -7.802 (P-value 0.000) and an effect size of 0.68, indicating a substantial improvement. In the Environmental Domain, the experimental group displayed a mean difference of -2.00 (SD 3.14) compared to the control group's

mean difference of 0.28 (SD). This resulted in a significant Z-value of -5.034 (P-value 0.000) and a medium effect size of 0.44. These findings led to the rejection of the null hypothesis (H_{03}) and the acceptance of the alternate hypothesis, highlighting the efficacy of group reminiscence as an intervention to enhance various QoL domains among older adults.

Section-9 Six Month Follow-up

A follow-up study is a type of research conducted to track and observe the same group of participants over an extended period of time after an initial study or intervention. The purpose of a follow-up study is to assess the long-term effects, changes, or outcomes resulting from a particular intervention, treatment, or event that was studied earlier. Follow-up studies serve several important purposes and have numerous uses across various fields of research and practice. Some of the key uses of follow-up studies include: Assessing Long-Term Outcomes, Evaluating Treatment Efficacy, Understanding Disease Progression, Identifying Risk Factors and Predictors, Monitoring Behavioural Changes and Validating Research Findings.

The follow-up studies play a crucial role in advancing scientific knowledge, validating research findings, understanding long-term impacts, and guiding evidence-based decision-making in various disciplines. Their longitudinal nature allows researchers to study phenomena and changes that would not be apparent in shorter-term studies, providing a more comprehensive understanding of the complex processes at play.

In this study, a follow-up study was undertaken six months after the initial study was completed to see the long-term effect of the group reminiscence on cognitive functions, geriatric depression and quality of life among older adults. This study has the lost to follow-up. This study lost 13 participants in a follow-up study; six were in the

experimental group, and seven were in the control group. The reasons for the lost to follow-up were that eight participants left the village, three were joined in the hospital due to illness, and two died. Hence, from the 130 participants, 117 were analysed for the follow-up. The Wilcoxon test was used to see the effect of group reminiscence within the group and Mann Whitney test was used to see the effectiveness of group reminiscence between the groups. The following tables shows the results of the follow-up study.

Table 24. Effectiveness of Group reminiscence on Cognitive impairment in the experimental group at Six months follow-up. **N=59**

MMSE	Mean	SD	Z	P value
Pre-test	19.8	1.35	-5.695	0.000
Post-test	20.66	1.54		
Pre-test	19.8	1.35	-2.558	0.011
Follow-up	20.15	1.60		

Above table shows the improvement in cognition (MMSE) scores in the experimental group during two significant time periods (from pre-test to post and pre-test to 6 months Follow up). The Wilcoxon singed rank test comparison showed significant improvement in cognition from pre-test to post-test (z=-5.695, p=0.000). Whereas in the six months follow-up, cognition improvement was noted (Z=-2.558, P=0.011). The difference in the cognitive improvement from the post-test at 12 weeks to six months follow-up was recorded. The result showed that the group reminiscence was effective in improving cognition among older adults. This improvement is a result of constant support and telephonic follow-up provided by the investigator.

Table 25. Effectiveness of Group reminiscence on Depression in experimental group at 6-months follow-up **N=59**

GDS	Mean	SD	Z	P value
Pre-test	6.92	0.88	-6.451	0.000
Post-test	5.88	0.72		
Pre-test	6.92	0.88	-5.00	0.000
Follow-up	6.41	1.20		

The Wilcoxon singed rank test comparison showed a significant reduction in Depression from the pre-test to the post-test (z=-6.451, p=0.000). Whereas in the 6-month follow-up, the reduction in geriatric depression was noted (Z=-5.00, P=0.000). However, the differences in the mean scores from the post-test to the follow-up were identified, and the results were statistically significant (P<0.001). The result has shown that the group reminiscence was effective in reducing depression among older adults. This study finds a long-term effect of Group reminiscence on depression among older adults.

Table 26. Effectiveness of Group reminiscence on Quality of life in the experimental group at 6-month follow-up

N=59

Quality of Life	Mean	SD	Z	P
Pre-Physical Domain	26.32	15.83	-5.072	0.000
Post_ Physical Domain	29.64	15.98		
Pre_ Physical Domain	26.32	15.83	-2.057	0.04
Follow-up_ Physical Domain	27.19	16.27		
Pre_ Psychological Domain	22.42	13.22	-6.33	0.000
Post_ Psychological Domain	28.19	12.23		
Pre_ Psychological Domain	22.42	13.22	-3.22	0.001
Follow-up _ Psychological Domain	23.81	14.20		
Pre_ Social Domain	25.51	16.13	-5.747	0.000
Post_ Social Domain	31.1	17.01		
Pre_ Social Domain	25.51	16.13	-2.848	0.004
Follow-up_ Social Domain	27.36	17.91		
Pre_ Environmental Domain	32.8	10.75	-4.117	0.000
Post_ Environmental Domain	34.88	10.16		
Pre_ Environmental Domain	32.8	10.75	-2.828	0.005
Follow-up _ Environmental Domain	33.61	11.16		
Pre_test Overall Qol	1.49	0.50	-4.359	0.000

Post-test Overall Qol	1.81	0.68		
Pre-test Overall_Qol1	1.49	0.50	-2.111	0.035
Follow-up_ Overall QoL	1.61	0.70		
Pre-test General Health	1.69	0.84	-3.771	0.000
Post-test General Health	1.97	0.83		
Pre-test General Health	1.69	0.84	-2.673	0.008
Follow-up_General Health	1.86	0.86		

The study evaluated changes in various domains of quality of life (QoL) and general health (GH) before and after an intervention, as well as at follow-up. Significant improvements were observed in all domains of QoL, as indicated by substantial mean differences and low p-values. For instance, in Dom1, there was a significant mean increase from the pre-test (26.32, SD = 15.83) to the post-test (29.64, SD = 15.98), while the pre-test to follow-up change was also statistically significant (from 26.32 to 27.19). Domains 2, 3, and 4 exhibited similar trends with significant improvements. The Overall QoL showed a noteworthy mean increase from the pre-test (1.49, SD = 0.50) to the post-test (1.81, SD = 0.68) and from the pre-test to follow-up (1.61, SD = 0.70). General health also improved significantly, with a mean increase from the pre-test (1.69, SD = 0.84) to the post-test (1.97, SD = 0.83) and from the pre-test to follow-up (1.86, SD = 0.86). These results suggest that the intervention had a positive impact on participants' QoL and GH across various domains, which was sustained at follow-up.

Table 27. Pre and post between the group analysis of MMSE and GDS experimental group and control groups in different points **N=117**

Variables	Mean Difference	SD	Z	P
Pre-test – Post-test _MMSE	-0.36	0.866	-6.777	0.000
Pre-test-Follow-up_ MMSE	-0.13	0.933	-3.425	0.001
Pre-test- Post-test_ GDS	0.51	0.702	-8.615	0.000
Pre-test-follow-up_ GDS	0.22	0.559	-5.861	0.000

The study examined the changes in cognitive function and depressive symptoms over time by comparing pre-test, post-test, and follow-up measurements. Notably, there was a significant mean decrease in the MMSE scores from pre-test to post-test, with a mean difference of -0.36 (SD = 0.866, Z = -6.777, p = 0.000), indicating an improvement in cognitive function following the intervention. This improvement was also observed at the follow-up assessment, although to a lesser extent, with a mean difference of -0.13 (SD = 0.933, Z = -3.425, p = 0.001). In contrast, the Geriatric Depression Scale (GDS) scores showed a significant mean increase from pre-test to post-test, with a mean difference of 0.51 (SD = 0.702, Z = -8.615, p = 0.000), suggesting an alleviation of depressive symptoms post-intervention. Similarly, this trend persisted at follow-up, with a mean difference of 0.22 (SD = 0.559, Z = -5.861, p = 0.000). These results imply that the intervention had a positive effect on cognitive function and depression, highlighting the positive effect of the intervention's impact on mental health and cognitive well-being.

Table 28. Pre and post between the group analysis of quality of life in experimental group and control groups in different points. N=117

Quality of Life	Mean	SD	Z	P
Pre -test- post-test Physical Domain	-1.56	3.02	-6.400	0.000
Pre- test- Follow-up Physical Domain	-0.37	2.64	-2.537	0.011
Pre -test- post-test Psychological Domain	-2.63	4.03	-8.804	0.000
Pre -test- Follow-up Psychological Domain	-0.49	2.64	-3.867	0.000
Pre -test- post-test Social Domain	-2.6	5.01	-7.149	0.000
Pre- test- Follow-up Social Domain	-1.15	3.37	-4.662	0.000
Pre- test- post-test Environmental Domain	-0.9	2.72	-4.900	0.000
Pre- test- Follow-up Environmental Domain	-0.25	1.86	-3.323	0.001
Pre- test- post-test Overall Quality of Life	-0.14	0.41	-4.909	0.000
Pre- test- Follow-up Overall Quality of Life	-0.04	0.33	-2.530	0.011
Pre- test- post-test General Health	-0.12	0.40	-4.270	0.000
Pre- test-Follow-up General Health	-0.06	0.38	-3.237	0.001

The study demonstrated statistically significant improvements in multiple domains of quality of life (QoL) and general health (GH) following an intervention. Notably, in

QoL Domain 1, there was a substantial mean decrease of -1.56 (SD = 3.02) from pre-test to post-test (Z = -6.400, p = 0.000) and a decrease of -0.37 (SD = 2.64) from pre-test to follow-up (Z = -2.537, p = 0.011). QoL Domain 2 showed similar improvements with a mean decrease of -2.63 (SD = 4.03) from pre-test to post-test (Z = -8.804, p = 0.000) and a decrease of -0.49 (SD = 2.64) from pre-test to follow-up (Z = -3.867, p = 0.000). Domains 3 and 4 also exhibited significant improvements. Furthermore, overall QoL displayed a substantial mean decrease of -0.14 (SD = 0.41) from pre-test to post-test (Z = -4.909, p = 0.000), and a decrease of -0.04 (SD = 0.33) from pre-test to follow-up (Z = -2.530, p = 0.011). General health likewise improved, with a mean decrease of -0.12 (SD = 0.40) from pre-test to post-test (Z = -4.270, p = 0.000), and a decrease of -0.06 (SD = 0.38) from pre-test to follow-up (Z = -3.237, p = 0.001). These findings suggest that the intervention had a significant and lasting positive impact on participants' QoL and GH across all domains. However, interpretation should consider the specific context and research objectives of the study.

Summary: This chapter was presented with data analysis. Descriptive statistics such as frequency and percentages were used to describe the sample characteristics, chi-square test was used to find out the association between demographic and outcome variables, and Pearson correlation opted to see the strength of association between outcome variables and inferential statistics such as Wilcoxon rank test and Mann Whitney-u test were used to find effectiveness of group reminiscence on cognition, depression and quality of life among older adults

CHAPTER-V
DISCUSSION

The present study demonstrated the effectiveness of Group reminiscence on Cognitive and mental health among older adults. An extensive literature review was carried out by the researcher to identify the relevant existing knowledge related to the present research area. From the reviewed studies, the researcher identified that most of the studies on group reminiscence were carried out in developed countries, and there is a lack of published literature or studies from developing countries like India and also from rural settings. So, the researcher decided to conduct a preliminary test and prove the effectiveness of group reminiscence, which is not yet practised in India, especially in rural communities. The study adopted a Quantitative approach with a descriptive cross-sectional and randomized controlled trial. The conceptual framework used for the study was based on Modified Wiedenbach's Helping Art Clinical Nursing Theory.

This study was done in two phases: Phase One with the assessment Phase and Phase Two with the Intervention phase. Phase one consisted of 327 participants, among them with inclusion and exclusion criteria, 130 participants were selected for phase two (intervention phase) and randomized into 65 in the experimental group and 65 in the control group. The experimental group received group reminiscence, which consisted of different themes with cognitive stimulants.

The outcome measures were cognitive functions, geriatric depression and quality of life. These were evaluated by Mini Mental Status Examination, Geriatric Depression and WHO-BREF Quality of Life. The present study was instituted at three time periods: pretest (before Intervention), post-test (After Intervention) and 6 Month Follow-up. The Data Collection period was from April 2022 to June 2023. The Data was analyzed using SPSS. 25 version.

Major findings

The findings of the study are discussed in terms of Objectives and Comparisons are made with other similar findings.

The major objectives of the study were to

1. Study the cognitive functions among older adults
2. Measure the depression among older adults
3. Assess the quality of life among older adults
4. Develop and evaluate the effectiveness of group reminiscence on cognitive functions, depression and QoL among older adults

The findings of the study are organised under the following headings

1. Demographic Characteristics
2. Cognitive impairment, Depression and Quality of life among older adults
3. Effect of group reminiscence on Cognition
4. Effect of Group reminiscence on Geriatric depression
5. Effect of Group reminiscence on Quality of Life
6. 6 months follow-up Analysis

1. Demographic Characteristics

The majority of the study participants in phase one were women (61.5%) under the age of 60-70 years (21.8%). Most of the study participants were married (62.4%), having three or more children (44%), 50.2% were living in the nuclear family, and 49.8% were joint families. Regarding the educational status, most of the study participants do not have any formal education (56.9%). As per the religion, most of the participants were Hindu religious (64.8%). The majority of the participant's income was supported by their sons (39.1%) and daughters (24.5%). The participants are having communication

with their children at least once a week (41.6%). Regarding current health, family support and social support, the majority of the participants reported poor health (43.4%), good family support 946.5%) and good social support (38.5%). Most of the participants spent their time watching TV (41.9%), and their rapport with their neighbours was very poor (45.3%).

This study also highlights significant gender-related disparities among the surveyed older adults. Marital status revealed that men were predominantly married, while women were more often widowed. Educational attainment showed men had higher rates of completion in primary, secondary, and higher education, while women frequently lacked formal education. Income sources indicated men primarily relied on sons, while women depended on daughters for financial support, with men more likely to receive government pensions. Leisure activities revealed more women engaged in watching TV, while reading newspapers or books was common among men. Social interactions with neighbours varied among participants. These findings emphasize the importance of gender-sensitive approaches when designing support and intervention programs for older adults, as tailored strategies can better address their diverse needs and promote their overall well-being and quality of life.

2. Cognitive impairment, Depression and Quality of life among older adults

The study investigates the presence of cognitive impairment and geriatric depression and its effects on the quality of life among 327 older adults. With the help of standardized tools, the study found the presence of the above-mentioned outcome variables.

The study provided a cognitive impairment prevalence and severity in a sample of 327 individuals. Notably, only 45.3% showed no cognitive impairment, highlighting that a significant portion of the sample experiences cognitive dysfunction. Mild

cognitive impairment was observed in 39.8% of individuals, representing subtle deficits, while 15.0% exhibited severe cognitive impairment, signifying significant decline. This study also provided valuable insights into depression among 327 older adults, revealing a range of symptoms from none to severe. Notably, 46.2% showed no signs of depression, while 39.8% had mild symptoms which can impact daily life. A smaller group had moderate (8.0%) or severe (6.1%) depression, highlighting significant mental health challenges. Depression and cognitive impairment significantly affect the quality of life among the elderly. These findings stress the need for design interventions, especially for mild cognitive impairment and depression, to support well-being and quality of life in older adults, as mental health varies widely in this population. Ongoing monitoring is crucial, even for those without symptoms. Healthcare professionals should be vigilant in screening and addressing depression to enhance well-being and quality of life. This data forms a foundation for future research and targeted interventions.

This data highlights various factors associated with cognitive impairment among the studied population. Gender, age, education level, type of family, number of children, current health status, family support, social support, and rapport with neighbours are significantly associated with cognitive impairment. These results support previous research findings. For instance, Konda et al (2018), Patel et al (2018) found similar associations in a study, and Bhatia et al (2020) and Sengupta et al (2018) reported comparable results in their cross-sectional analysis of cognitive function in elderly populations. These consistent findings across different studies reinforce the strength of the identified associations between these factors and cognitive impairment. While the depression is also associated with following variables: women, increasing age, illiterate and these are supported by previous results by Aravind (2004), Reddy et al (2014).

The study recruited mild cognitive impairment and mild depression (n=130) from the 327 participants in phase one to assess the effectiveness of group reminiscence among older adults. These 130 were randomly allocated into experimental (n=65) and control (n=65) groups with inclusion and exclusion criteria. The discussion for this objective was followed.

This phase involved 130 participants (65 in the experimental and 65 in the control group). Most of the samples in the experimental and control groups belonged to the age group of 60-70, i.e., 72.3% and 64.65% respectively. The mean age of the experimental group was 68.31 ±5.74years, and that of the control group was 68.88 ± 6.47. The majority of the participants in the Experimental and control group were females (69.2% and 66.2% respectively). A maximum of the samples in both the experimental and control groups were married (64.6% and 69.2% respectively). The majority of the study participants in the experimental and control group had primary education (55.4%), where as in the control group, many participants had no education (55.4%). The majority of the participants in the experimental and control groups belonged to the Hindu religion (64.5% and 67.7% respectively). The majority of the participants in the experimental and control groups were living in Joint families (64.6% and 67.7% respectively). Many participants in the experimental and control group had three children (56.9% and 53.9% respectively). The majority of the participants in the experimental and control groups were completely dependent on their children to full fill their daily activities (60% and 56.9% respectively). Most of the participants in the experimental group and control group were having talks with their children twice a week (49.2% and 75.4% respectively), whereas 4.6% of the participants in experimental and control groups were having no talks as they don't have the children. Most of the participants in the experimental group had fair and poor current health status (33.8%),

while in the control group, 41.5 % of the participants had poor health. Many participants in the experimental and control groups were receiving good family support (56.9% and 53.8% respectively). The majority of the participants in the experimental and control reported poor social support (49.2% and 55.4% respectively). The majority of the participants in the experimental and control group were watching TV during their Leisure time (43.1% and 49.2% respectively). Many older adults in the experimental and control group had rapport with their neighbours for sometimes only (63.1% and 64.6% respectively)

Group Reminiscence

The reminiscence therapy group provides an opportunity to re-experience "the good old days". It can also be assumed that sharing the memories and re-experiencing these times with other group members may encourage them to convey their positive emotions and to promote their self-awareness, which is meaningful to enhancing the remaining capacity activities of daily life in them. It may involve the recall of particular episodes that may or may not have been previously forgotten, and that are accompanied by the sense that the remembered episodes are veridical accounts of the original experience. This may be a group or individual process. Reminiscence can be used to discover meaning and continuity, to draw on the past experience to solve present problems and to cope, to provide an instruction story, to ruminate about un resolved disturbing events in the past, and to maintain memories of significant others.

3. Effectiveness of Group reminiscence on Cognition among older adults

Cognitive impairment, often associated with conditions like dementia and Alzheimer's disease, poses a significant global health challenge. As the ageing population grows, the need for effective interventions to improve cognitive function and quality of life for those affected becomes more urgent. Traditional pharmacological

treatments have had limited success in slowing cognitive decline, leading researchers and practitioners to explore non-pharmacological approaches like reminiscence therapy. This section presents a discussion on the efficacy of group reminiscence as a therapeutic intervention for cognitive impairment, drawing from this study and literature.

The cognition of the study participants in the experimental group improved with the mean score of MMSE increasing from 19.83 to 20.62 after they practised 12 weeks group reminiscence intervention. In contrast, the control group showed no significant change in cognitive function. These results highlight the efficacy of reminiscence therapy in enhancing cognitive function among older adults, aligning with previous research that has demonstrated the cognitive benefits of reminiscence interventions. Supporting studies have consistently shown that group reminiscence can have a progressive impact on cognitive function among older adults. For instance, a study by Woods et al. (2018), Wang (2007) reported that group reminiscence managed significant improvements in cognitive performance in older adults with mild cognitive impairment. Additionally, a meta-analysis conducted by Smith et al. (2020) found that reminiscence interventions were associated with moderate to large effect sizes in improving cognitive function in older populations.

Bademli et al. (2018) observed significant cognitive improvement in geriatrics following reminiscence therapy, advocating its inclusion in routine care. Tadaka and Kanagawa (2007) reported cognitive function enhancement in the intervention group immediately and after a 6-month follow-up.

Jahanbin et al. (2014) noted cognitive status improvements in older adults undergoing group reminiscence therapy, suggesting its long-term benefits. Woods et al. (2012) found significant cognitive function improvements in individuals with dementia

who received group cognitive stimulation therapy, incorporating reminiscence activities.

O' Philbin et al. (2018) reported sustained cognitive enhancements and reduced behavioural symptoms and caregiver burden in dementia patients after group reminiscence therapy. Kong et al. (2009) highlighted improvements in cognitive functions, particularly memory and attention, in elderly adults with mild cognitive impairment engaged in reminiscence groups. Hsieh et al. (2013) found that structured group reminiscence programs significantly improved various cognitive functions in older adults with cognitive impairment. However, some studies, such as Ito et al. (2007) and Li et al. (2019), reported no significant cognitive improvements with group reminiscence. These collective findings underscore the potential benefits of group reminiscence therapy in enhancing cognitive function in older adults, though variations exist across studies. These findings emphasise the therapeutic potential of group reminiscence as a non-pharmacological intervention for cognitive decline in older adults and highlight its relevance in promoting cognitive health and quality of life in the ageing population. This indicates regular group reminiscence should be considered as routine daily care.

4. Effectiveness of Group reminiscence on Depression among older adults

Group reminiscence has emerged as a promising approach to addressing geriatric depression. Depression often leads to isolation and loneliness, exacerbating its severity. This therapy creates a supportive environment where individuals can share their memories, experiences, and emotions, fostering a sense of connection and reducing feelings of isolation. Participants engage in positive reflections on past events, potentially experiencing catharsis and gaining new perspectives on their struggles with depression. Studies suggest that reminiscence therapy can lead to an increase in

happiness and decreased depression in older adults. In a group setting, participants can learn and share coping strategies, empowering them to better manage their depression. This approach emphasises the importance of social support in addressing geriatric depression.

In this study, the effectiveness of 12 weeks of group reminiscence demonstrated a significant impact on reducing depression among older adults in the experimental group. This is supported by the significant decrease in depression scores within the experimental group, with a notable pre-intervention mean of 6.95 (SD 0.86) that decreased to 5.92 (SD 0.71) post-intervention, resulting in a substantial Z-value of -6.681 (P-value 0.000), indicating a reduction in depressive symptoms. In contrast, the control group displayed insignificant changes in depression scores, as evidenced by the pre-intervention mean of 7.02 (SD 0.89) and post-intervention mean of 7.03 (SD 0.87), accompanied by a Z-value of -0.447 (P-value 0.655), signifying that there is no significant difference.

Group reminiscence therapy is addressed by creating a safe and supportive social environment that encourages individuals to engage in meaningful interactions with the older adults in this study. By sharing their experiences and listening to others' stories, participants may experience a sense of belonging and reduced feelings of isolation, which can contribute to improved emotional well-being. In this study, group reminiscence presented a unique approach to addressing mental health challenges through shared memories and social interaction. By creating a supportive environment for individuals to share their experiences, the therapy allowed participants to connect, gain new perspectives, and discover positive emotions amidst their struggles.

These findings align with prior research, including Wu L. F. (2011) study demonstrating the positive effects of group reminiscence in reducing depression among

older adults. Studies by Watt and Cappeliez (2000), Hsieh et al. (2010) and Goldwasser et al, (1987) emphasize the effectiveness of reminiscence therapy in improving mental health and reducing depressive symptoms in elderly individuals. JJ Wang (2004), which demonstrated a significant reduction in depressive symptoms among older adults through reminiscence therapy, highlighting its suitability for the elderly population in long-term care. Similarly, Zhou et al. (2012) reported significant reductions in depression scores among community-dwelling elderly individuals after six weeks of group reminiscence therapy, emphasizing its potential to enhance mental health in older adults. Additionally, JJ Wang (2005) and JJ Wang et al. (2005) found that group reminiscence effectively reduced depression in older adults, supporting the current study's findings and emphasizing its benefits for both older adults and their families. However, in contrast, Chao et al. (2006) did not find a significant effect of group reminiscence on depression.

Group reminiscence therapy emerges as a potent tool against geriatric depression, offering older adults a chance to reconnect with their past, discover joy, and combat isolation. The cited research underlines the influence of social interactions on mental health, the power of positive reminiscing for emotional strength, and the shared strategies that help manage depression. Beyond depression management, group reminiscence empowers older adults to confront mental health challenges, fostering hope and purpose.

5. Effectiveness of Group reminiscence on Quality-of-life older adults

In an ageing world, the well-being of older adults takes centre stage, driving the development of innovative interventions. Group reminiscence therapy stands out as a structured approach, inviting seniors to engage in discussions about their life experiences within a supportive group context. This therapy holds the promise of

enhancing the quality of life for older individuals by fostering social connections, regulating emotions, stimulating cognitive faculties, and promoting life reflection a holistic approach to well-being. By addressing geriatric depression and cognitive impairment, which significantly impact an individual's quality of life, this intervention seeks to uplift and improve the overall well-being of older adults.

The quality of life was assessed by using WHO BREF quality of life, which has four domains: Physical health domain, Psychological Domain, Social Relationship Domain, and Environment Domain. Mean and standard deviation was calculated and compared at pre-test and post-test among experimental and control group.

The study examined significant improvements in various domains of Quality of Life (QoL) among older adults in the experimental group who underwent group reminiscence. These improvements encompassed overall QoL, general health, physical and psychological domains, as well as the social domain. Notably, the experimental group's overall QoL and general health exhibited substantial enhancement post-intervention. Moreover, the physical and psychological aspects of QoL saw remarkable improvements in the experimental group, whereas the control group showed no changes. Similarly, the social domain showed significant progress in the experimental group, contrasting with limited changes in the control group. Although the environmental domain demonstrated improvement in the experimental group, this was not statistically significant compared to the control group. Overall, the study underscores the positive impact of group reminiscence therapy on multiple dimensions of QoL in older adults, highlighting its potential as an effective intervention to enhance their well-being.

The findings of this study highlight the positive impact of group reminiscence therapy on various domains of quality of life (QoL) among older adults. These results contrast with previous research that demonstrated the effectiveness of reminiscence therapy in enhancing overall QoL in older individuals. Additionally, a study by Aşiret, G. D. (2018) emphasized the improvement in general health and psychological well-being through reminiscence interventions. Similarly, a meta-analysis by De Assunção Gil et al. (2018) revealed the positive effects of reminiscence therapy on physical, psychological, and social domains of QoL in older adults. Furthermore, a study by Chen et al. (2019) stresses the significance of group reminiscence in enhancing the social domain of QoL in elderly populations. There are few previous research findings supporting the studies, including Siverová and Bužgová (2018), who discovered that reminiscence had a positive impact on physical and mental health domains, contributing to enhanced quality of life. Davide et al.'s systematic review (2002) emphasized the effectiveness of weekly reminiscence sessions over 12 weeks in improving older adults' quality of life. Ahmad et al. (2020) conducted a study on Iranian older adults, highlighting reminiscence as an effective means to enhance their quality of life by recalling memories and confidently sharing life experiences. Similarly, Savitri et al. (2020) found that reminiscence therapy improved the quality of life for older adults in the experimental group. However, Roghieh et al.'s study (2015) diverged from these results, as their research showed no improvement in the quality of life among elderly participants in reminiscence intervention groups.

6. Follow-up Study

A follow-up study is conducted in health research to gather additional information about participants or subjects over a specified period of time after an initial study or intervention has taken place. It involves tracking and observing individuals to assess

the long-term effects of a particular treatment, intervention, or exposure on their health outcomes. The extended duration of six months allows for a more in-depth exploration of memories and provides opportunities for personal growth and healing. In this study, we did a 6 month follow-up analysis to track the progress and outcomes of participants over an extended period and to assess the treatment effectiveness to determine the effectiveness of group reminiscence beyond the short-term results.

We observed that few people lost to follow-up. Six participants from the experimental group and seven participants from the control group were lost during the follow-up assessment. Therefore, from 130 participants experimental group (n=59) and control group (n=58) were analysed for the follow-up.

Significant improvements were observed in cognition from pre-test to post-test (z=-5.695, p=0.000), and this improvement was maintained at the 6-month follow-up (Z=-2.558, P=0.011), indicating the effectiveness of group reminiscence in enhancing cognitive function among older adults. Similarly, there was a significant reduction in geriatric depression from the pre-test to the post-test (z=-6.45, p=0.000), and this reduction continued at the 6-month follow-up (Z=-5.00, P=0.000), highlighting the long-term impact of group reminiscence on reducing depression. These results emphasize the enduring benefits of group reminiscence therapy for older adults, supporting its use as an intervention for depression. Mental health practitioners should consider integrating group reminiscence into treatment plans, providing a valuable tool to improve well-being and cognitive abilities over time.

Conclusion: To conclude, this chapter discussed the major findings of the study compared with previous research, which are supporting and contrasting to the present study. The effectiveness of the intervention protocol was also highlighted with supporting studies.

CHAPTER-6

CONCLUSION, IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

CONCLUSION

India is home to one of the world's largest populations of older adults, making healthcare services for them a critical concern, especially in rural areas. The challenges are multifaceted, encompassing limited access to quality healthcare, specialized geriatric care, and health insurance for many elderly individuals. In rural regions, the situation is even more daunting as older adults encounter obstacles like social isolation, elder abuse, neglect, and age-related health issues. To tackle these issues effectively, there is a pressing need for increased societal awareness, policy interventions, and strong community support. Promoting active Ageing has emerged as a significant focus in India, with efforts aimed at encouraging older adults to maintain physical and mental activity, engage in social interactions, and continue contributing meaningfully to society. By addressing these challenges collectively, we can strive to create a better and more inclusive environment for India's elderly population.

Nursing care for older adults residing in rural areas requires a comprehensive and holistic approach that addresses their specific needs and challenges. A recent study investigated the effectiveness of group reminiscence therapy on cognitive functions, depression, and quality of life among rural older adults. The findings revealed significant improvements in all the measured outcomes. Group reminiscence therapy proved beneficial in enhancing cognitive functions, including memory, attention, and problem-solving abilities. This positive effect can be attributed to the therapy's ability to stimulate neural connections and encourage mental engagement among participants. Moreover, engaging in reminiscence therapy had a notable impact on emotional well-

being. By providing a safe space to process and reframe past experiences, the therapy contributed to reduced feelings of loneliness and depression in the participants. Furthermore, participating in reminiscence therapy had a broader positive impact on the overall quality of life for older adults in rural communities. The therapy fostered meaningful social interactions, promoted a sense of identity, and increased feelings of self-worth and life satisfaction. What sets this study apart is its uniqueness, as there were no previously published data on a similar intervention specifically tailored for rural community older adults. The results highlight the significance of reminiscence therapy as an effective approach to improving the well-being of older adults in rural areas, addressing their distinct needs and enhancing their overall quality of life.

Nurses and healthcare professionals assume a vital role in facilitating reminiscence therapy sessions for older adults, establishing a safe and supportive atmosphere where memories and experiences can be shared openly. Moreover, these professionals possess the skills to customize the therapy to cater to individual needs, effectively addressing the cognitive and emotional challenges confronted by older adults. Providing nursing care for rural older adults demands creativity, adaptability, and unwavering dedication to addressing the distinct challenges encountered in such settings. It entails forging robust relationships with the community, fostering collaborations with fellow healthcare providers, and advocating persistently for the enhancement of healthcare services in rural areas. By embracing these responsibilities, nurses can truly make a significant difference in the well-being and quality of life of older adults residing in rural communities.

IMPLICATIONS

The findings of the study have several implications in various areas in nursing such as nursing practice, nursing education, nursing administration and nursing research.

Study implications:

Group reminiscence for older adults has several future implications as people continue to age, and the importance of promoting good quality of life and well-being among older adults is gradually recognized. The future implications of group reminiscence on the elderly are likely to include a bigger prominence on mental health, improved social connection, technical integration, cultural sensitivity, and increased research, policy support, and public awareness. These changes can subsidise to the overall well-being and quality of life of older adults as they continue to age. Here are some potential future implications

Practice Implications:

The practice of group reminiscence intervention will expect to observer several future developments and implications as well. The modifications will mark how professionals and administrations implement group reminiscence intervention:

1. Researchers may integrate digital implements and platforms for group reminiscence sessions. Virtual group gatherings and reminiscence apps can make contributions more reachable, especially with limited access to in-person sessions.
2. Group reminiscence may remain to develop a strong evidence base, with researchers relying on study results to inform their approaches. This could lead to the formation of best practices and strategies for effective group reminiscence intervention.
3. Healthcare systems may gradually include group reminiscence into their treatment modalities. This combination could include partnerships between community healthcare workers and nursing personnel to ensure a variety of care.
4. Continuing education may help to update the latest research, techniques and approaches in group reminiscence.
5. With telehealth services, group reminiscence provides older adults with more flexibility in joining in intervention.

Policy Implications

The future implications for policy related to group reminiscence for the elderly can have an effect on the convenience, worth, and integration of group reminiscence into healthcare and social services. Here are some potential policy implications:

1 Governments and healthcare systems may identify the importance of group reminiscence as an evidence-based intervention for older adults.
2 Quality standards and regulations for group reminiscence should established by policymakers to confirm that they are provided by trained and certified professionals.
3 Policy makers may finance staff development programs to train and certify professionals in reminiscence therapy. This can help meet the demand for qualified experts as the ageing population increases.
4 Policy makers may support public responsiveness campaigns to teach older adults and their care givers about the benefits of group reminiscence. This can reassure larger participation and lessen the stigma surrounding mental health care for the elderly.

Research

- Future research may focus on long-term effects to study how group reminiscence impacts on older adults' mental health and quality of life and also social well-being.
- Advancements in neuroimaging and neuroscience may permit investigators to inspect the neurological groundwork of group reminiscence.
- Research may discover the participation of family members and caregivers in group reminiscence therapy. Studying the impact of family participation on therapy outcomes and caregiver well-being can be insightful.

Strength of the study

- This study is the first of its kind to test the effectiveness of a new intervention protocol in rural communities in India.

- The use of a randomized controlled trail design helped to control the covariates in the study.
- Follow-up and investigator visits ensured treatment adherence.
- The instruments used for the study were standardized instruments with established validity and reliability.
- Use of appropriate statistical techniques for analysis.

LIMITATIONS

- The study was confined only to a single setting.
- The was limited to mild cognitive impairment and mild geriatric depression
- The control group received no treatment
- The study was a single-blind study.

Summary

This chapter dealt with conclusions and implications in the nursing practice, education, administration and research. Limitations and recommendations for further study were also discussed.

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Appendix-A

List of Publications and Presentation from Current Thesis

Journal for ReAttach Therapy and Developmental Diversities
eISSN: 2589-7799
2023 August; 6 (9s): 83-92

Group Reminiscence for Treating Geriatric Depression in Rural Community: A Randomized Controlled Trial

David Ratna Paul Talagathoti[1], Varalakshmi Manchana[1*]

Received: 10-June-2023
Revised: 15-July-2023
Accepted: 01-August-2023

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Abstract

Introduction: Geriatric depression is one of the most common challenges encountered in ageing adults. Early identification of geriatric depression and adopting measures to promote mental health and quality of life is essential. Reminiscence is one of the most effective non-pharmacological interventions to promote mental health in older adults.

Objective: The aim of the study was to assess the effectiveness of group reminiscence on depression among older adults.

Methods: A Single Blind Randomized controlled trial was conducted among 130 older adults. The participants were randomized in to Experimental (65) and Control (65) groups. A Geriatric depression scale was used to assess the presence of depression symptoms. 12 weeks of group reminiscence was implemented with selected themes. Pre-post assessment of depression levels were analysed using statistical analysis with SPSS 25 version

Results: The participants age ranged from 60 to 85 years. Group reminiscence shown significant difference in the experimental group compared to the controlled group and the mean score was statistically significant ($Z=6.68$ $P< 0.001$). In the intergroup comparison a significant difference was found between the experimental and control group and the mean difference scores in Geriatric depression was statistically significant ($Z= -8.809$, $P<0.001$). Group reminiscence was found to be effective in decreasing depression among rural older adults in South India.

Keywords: Depression, Mental health, Randomized controlled trial, Rural older adults and Structured group reminiscence.

1. Introduction

The population of elderly is increasing worldwide. About 9.4% of India's population is over 60 years, which is similar to Indonesia's but lower than China's (12.4%). India has over 125.6 million older adults and projections show that by 2050, this population could be 316.7 million (WPA, 2017). The occurrence of disease, disability, psychological, social and physical health-related problems are also increasing rapidly among older adults. The

Chettinad Health City Medical Journal
Volume 12, Issue 3 - 2023, Pg. No. 62-68
Peer Reviewed & Open Access Journal

Research Article

Group Reminiscence as an Effective Intervention for Cognitive Impairment among Rural Older Adults in South India: A Randomised Controlled Trial

David Ratna Paul Talagathoti[1], Varalakshmi Manchana[2]

[1]PhD Scholar, School of Medical Sciences, University of Hyderabad, India.
[2]Assistant Professor, School of Medical Sciences, University of Hyderabad, India.
DOI: https://doi.org/10.24321/2278.2044.202353

I N F O

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https://orcid.org/0000-0001-8072-2414
How to cite this article:
Talagathoti DRP, Manchana V. Group Reminiscence as an Effective Intervention for Cognitive Impairment among Rural Older Adults in South India: A Randomised Controlled Trial. Chettinad Health City Med J. 2023;12(3):62-68.

Date of Submission: 2023-04-24
Date of Acceptance: 2023-07-18

A B S T R A C T

Background: Early identification of cognitive impairment and adopting measures to promote cognitive health is essential for a better quality of life. Reminiscence is a psychosocial intervention and is one of the effective non-pharmacological interventions to promote cognitive health in older adults. The present study aims to investigate the effectiveness of group reminiscence among older adults.

Methods: The present study was a single-blind randomised controlled trial (RCT) conducted in Telangana, India. A total of 130 older adults, aged 60 years and above, who met the inclusion criteria were recruited in the study. Of these adults, 65 subjects each were randomly assigned to experimental and control groups. The data were collected using the mental status examination. The experimental groups received a group reminiscence for 12 weeks. The data were analysed using the SPSS-25 version.

Results: The findings of the study highlight the effectiveness of reminiscence as demonstrated in the improvement in the experimental group ($Z = -5.47$, $p < 0.01$). The pre-post mean difference of the cognitive functions between the groups was analysed; the Z value was -6.174, p value was less than 0.01, and the effect size was -0.54, indicating a large difference due to the group reminiscence intervention.

Conclusion: The study findings highlight the effectiveness of the group reminiscence intervention in promoting cognitive functioning among older adults. Given the substantial growth of the ageing population in countries like India, where nurses play a critical role in the primary healthcare system, the study supports the need for equipping primary healthcare professionals with non-pharmacological interventions like group reminiscence to promote cognitive and mental health in the elderly population.

Keywords: Cognitive Function, Group Reminiscence, Rural Communities, Older Adults

Chettinad Health City Medical Journal (P-ISSN: 2277-8845 & E-ISSN: 2278-2044)

INC 2022

4th International Nursing Conference in New Delhi 2022 (INC)

On Recent Advances in Nursing Education, Research, Nursing Care and Psychiatric Nursing.

Organized by: Institute of Nursing Education and Research, New Delhi, ***Venue*- Vishwa Yuvak Kendra,** Chanakyapuri, New Delhi, 110 021

7th October 2022

Certificate

For Paper/Poster Presentation T. DAVID RATNA PAUL presented a paper on "Effectiveness of Group Reminiscence on Cognitive Health among Older Adults"

Number of Credit hours Awarded by the Indian Nursing Council CNE hours- 5 CNE hours (1 credit)

Dr. Archna Sharma
Director IEAR

Dr. Ashia Quershi

SOCIETY FOR NEUROCHEMISTRY INDIA (SNCI)

36th Annual Meeting of SNCI and International Conference On

ONE HEALTH AND TRANSLATIONAL RESEARCH IN NEUROSCIENCES

Certificate

This is to certify that ***Dr. / Ms. / Mr.*** T David Ratna Paul

has Participated in / as a Chairperson / Invited Speaker / Participant / Poster Presentation / Oral Presentation in the 36th Annual Meeting of Society for Neurochemistry India (SNCI) and 3 days International Conference ***(SNCICON-2022)*** *on* ***"One Health and Translational Research in Neurosciences"*** *jointly organized by* ***Dr. G. M. Taori Central India Institute of Medical Sciences (CIIMS), Nagpur*** *and* ***Indian Institute of Information Technology (IIIT), Nagpur*** *from 10th to 12th November 2022.*

Dr. Rajpal Singh Kashyap
Organizing Secretary
SNCICON 2022

Prof. Prakash Babu
Secretary General
SNCI

Dr. M. K. Thakur
President
SNCI

Appendix-B

Achievements

IoE-Directorate
प्रतिष्ठित संस्थान-निदेशालय
University of Hyderabad
हैदराबाद विश्वविद्यालय
Gachibowli, Hyderabad – 500046
गचीबोवली, हैदराबाद - ५०००४६

प्रतिष्ठित संस्थान
INSTITUTION OF EMINENCE
राष्ट्रीय अपेक्षाएँ, वैश्विक मानक
National Needs, Global Standards

SANCTION ORDER

No. UoH-IoE/Travel/22/40

Date : 12-09-2022

To
Prof. M. Varalakshmi,
School of Medical Sciences,
University of Hyderabad,
Hyderabad 500046.
Email: lakshmi@uohyd.ac.in

Sub : Sanction of Travel Grant to Mr. T David Ratna Paul, Ph.D scholar – Reg.
Ref : VC's approval dated : 09-09-2022

Sir,

The approval and sanction of the Competent Authority is conveyed for the release of financial assistance of ***Rs.19,500/- (Rupees Nineteen Thousand Five Hundred Only)*** towards registration fees and travel expenses to your PhD scholar, Mr. T David Ratna Paul (Reg.No. 18MNPH02), School of Medical Sciences to attend the conference entitled "4th International Nursing Conference 2022" at New Delhi on 07-10-2022 under IoE Travel Grant Scheme :

Terms & Conditions :

1. The concerned Faculty is permitted to draw temporary advance for the above on behalf of his student and bills for advance drawn should be submitted within 15 days after completion of the conference.
2. PhD scholar is permitted to travel by Air in Economy class, by following all the established procedures/guidelines for air travel.
3. The IoE is obligated to extend the financial support to the extent of sanction conveyed and therefore the onus lies on to the Faculty to confine the expenses within the sanctioned amount.
4. PhD scholar should submit a brief report on the outcome and its relevance to the IoE Directorate after completion of the conference.

M. Thanasbyam
Director, IoE
12/9/22

Director / निदेशक
Institution of Eminence / प्रतिष्ठित संस्थान
University of Hyderabad / हैदराबाद विश्वविद्यालय
Prof. C.R. Rao Road / प्रो. सी आर राव रोड
Gachibowli / गचीबोवली
Hyderabad - 500046/ हैदराबाद - ५०००४६

Copy to :

1. Prof. M. Varalakshmi, School of Medical Sciences
2. Mr. T David Ratna Paul (Reg.No. 18MNPH02)
3. Deputy Registrar (IoE Cell, F&A) - with a request to create an account in FAMOUS
4. Travel Grant File
5. Master File

Expenditure is chargeable under the Head: OH-31.03 – Travel Expenses

प्रतिष्ठित संस्थान
INSTITUTION OF EMINENCE
राष्ट्रीय अपेक्षाएँ, वैश्विक मानक
National Needs, Global Standards

INSTITUTION OF EMINENCE

Performance-Based Publication Incentive Scheme for non-Net Fellows

CERTIFICATE

This is to certify that Mr. T. David Ratna Paul, Reg. No. 18MNPH02, Ph.D. Scholar, School of Medical Sciences, University of Hyderabad, is selected for the Performance-Based Publication Incentive Scheme for non-Net Fellows for the publication at Rs.12,000/- per month.

Date: 01-11-2023
Place: Hyderabad

M. Thanarhyam
Director, IoE 2/11/23
Director / निदेशक
Institution of Eminence / प्रतिष्ठित संस्थान
University of Hyderabad / हैदराबाद विश्वविद्यालय
Prof. C.R. Rao Road / प्रो. सी आर राव रोड
Gachibowli / गचीबोवली
Hyderabad - 500046/ हैदराबाद - ५०००४६

Appendix-C

IEC Approval Letter, Permission Letter and Consent form

UNIVERSITY OF HYDERABAD
INSTITUTIONAL ETHICS COMMITTEE DECISION LETTER

IEC No. **Application No:**	UH/IEC/2021/34	**Date of review**	09-03-2021
Project Title:	Evaluating effectiveness of group Reminiscence on cognitive and mental health among older adults		
Principal Investigator/ Co-PI:	PI: T. David Ratna Paul CI: Dr. M. Varalakshmi		
Participating Institutes if any	----	**Approval from Participating Institute**	---
Documents received and reviewed	Application, proposal, consent form, participant information sheet, permission letter and CV submitted		
In case of renewal submission of update	----		
Decision of the IEC:	Approved Duration: One year from date of approval		
Any other Comments Requirements for conditional Approval	----		
Members Present	Dr. A.S.Sreedhar, Prof. B. R. Shamanna, Dr. M. Varalakshmi, Sri.A. Madhava Rao, Dr. M. Srinivas, Dr. Deepa Srinivas, Dr. M.K. Arunasree and Ms. A. D. Shobhavath		

Please note:

a. Any amendments in the protocol must be informed to the Ethics committee and fresh approval taken.
b. Any serious adverse event must be reported to the Ethics Committee within 48 hours in writing (mentioning the protocol No. or the study ID)
c. Any advertisement placed in the newspapers, magazines must be submitted for approval.
d. If the conduct of the study is to be continued beyond the approved period, an application for the same must be forwarded to the Ethics Committee.
e. It is hereby confirmed that neither you nor any of the members of the study team participated in the decision making/voting procedures and declared conflict of interest.

A S Sreedhar 09/03/2021

Chairman

(Dr. A S Sreedhar)

9/3/21

Member Secretary

(Prof. B.R.Shamanna)

09/03/2021

Convenor

(Dr. M. Varalakshmi)

Address: School of Medical Sciences, University of Hyderabad, C. R. Rao Road, Gachibowli,Hyderabad-5000046
Tel (O): +91-040-23135470/23135471 Email: iec_uoh@uohyd.ernet.in, deanmd@uohyd.ernet.in

UNIVERSITY OF HYDERABAD
SCHOOL OF MEDICAL SCIENCES

To,
The Medical Officer
Patancheru Rural Health Center
Patancheru,
Telangana.

Date: 03/02/2021

Sub: Proposal for working with the community for health promotion among older adults from
The selected communities under the purview of the Rural/Urban Health Center.

Dear Sir,

My self, T David Ratna Paul, pursuing my PhD in Health Sciences (Nursing Sciences) under the guidance of Dr M. Varlakshmi, School of Medical Sciences, University of Hyderabad. I am pleased to mention that our school closely contributes to the Health and and well-being among ageing populations in different community settings, including old age homes in and around the Hyderabad.
As part of my PhD Research. I am planning to study on mental health and cognitive performance among ageing adults. In related to this I will be developing an intervention program (Group Reminiscence) under the able monitoring and guidance of my supervisor (Dr M.Varalakshmi), to study its effectiveness on Cognitive and Mental health among older adults from different community settings.

We thank you for your constant cooperation and support in our earlier collaborations and look forward to your approaval and extended support in conducting my study and in other community based research activities towards healthy ageing.
I will be happy to provide any further information in this regard.

Sincerely

3/2/21

T David Ratna Paul
Reg. No. 18MNPH02
PhD Scholar in Nursing Sciences
School of Medical Sciences, University Of Hyderabad
(9000040422, davidratnapaul@gmail.com)

Approved
3/2/21

HEALTH OFFICER
R.H.C. PATANCHERU,
Dept. of H&FW under OMC Hyd.
03/02/2021

Faculty Supervisor
(Dr.M.Varalakshmi)
(LAKSHMI@UOHYD.AC.IN)

Clinical Trial Details (PDF Generation Date :- Sun, 22 Oct 2023 12:10:20 GMT)

CTRI Number	CTRI/2021/12/038562 [Registered on: 10/12/2021] - **Trial Registered Prospectively**
Last Modified On	03/10/2023
Post Graduate Thesis	Yes
Type of Trial	Interventional
Type of Study	Preventive
Study Design	Other
Public Title of Study	Evaluating the Effectiveness of Group Reminiscence among Older Adults.
Scientific Title of Study	Evaluating the Effectiveness of Group Reminiscence on Cognitive and Mental Health among Older Adults

Secondary IDs if Any

Secondary ID	Identifier
NIL	NIL

Details of Principal Investigator or overall Trial Coordinator (multi-center study)

Details of Principal Investigator	
Name	T DAVID RATNA PAUL
Designation	PhD Scholar
Affiliation	University of Hyderabad
Address	School of Medical Sciences, Active and Healthy Ageing Research Lab, University Of Hyderabad, Gachibowli, Hyderabad Hyderabad TELANGANA 500046 India
Phone	09000040422
Fax	
Email	davidratnapaul@gmail.com

Details Contact Person (Scientific Query)

Details Contact Person (Scientific Query)	
Name	Dr M Varalakshmi
Designation	Assistant Professor
Affiliation	University of Hyderabad
Address	School of Medical Sciences, Active and Healthy Ageing Research Lab, University Of Hyderabad, Gachibowli Hyderabad TELANGANA 500046 India
Phone	9441275157
Fax	
Email	lakshmi@uohyd.ac.in

Details Contact Person (Public Query)

Details Contact Person (Public Query)	
Name	T DAVID RATNA PAUL
Designation	PhD Scholar
Affiliation	University of Hyderabad
Address	School of Medical Sciences University Of Hyderabad, Gachibowli Hyderabad TELANGANA 500049 India
Phone	09000040422
Fax	

Informed Consent Form

Information Sheet

The number of ageing population is on the rise worldwide, with India hosting approximately 104 million older adults, comprising 8.6% of the total population of 1,210.9 million. Of these, 53 million are females, and 51 million are males. A significant majority, more than 73 million elderly individuals (71%), reside in rural areas. The prevalence of cognitive and mental health impairments among the elderly is an increasingly pressing public health concern.

With a focus on advancing mental health promotion, the current research is being proposed as an integral part of my PhD study, conducted under the guidance of Dr M. Varalakshmi, Assistant Professor, School of Medical Sciences, University of Hyderabad. The study will involve participants who will respond to their sociodemographic details, mental health status, and cognitive functioning. Then, the researcher will assess cognitive functions, depression quality of life. After careful assessment, mild stage of cognitive impairment and depression study subjects were randomly assigned to experimental group and control group. Group reminiscence intervention will provide to the experimental group and control group receive general health education.

The duration of the intervention is for 12 weeks. The privacy and confidentiality of participant data and information will be rigorously maintained. Participants will have the flexibility to withdraw from the study at any point, ensuring their convenience. We are dedicated to supporting you in gaining insights into your health status and facilitating your engagement in our cognitive and mental health program. Your valuable time, honest feedback, and active participation in the program are greatly appreciated.

By signing the informed consent form, you acknowledge your comprehension, willingness, and voluntary engagement in the study, including any video and/or audio recording as necessary for the research. If you agree to participate, please give your signature to the consent form.

Informed Consent Form

I am fully aware of my freedom to participate and withdraw from the study and have comprehended the information pertaining to the study's objectives. I willingly agree to participate, exercising my own judgment, in the research titled "Assessing the Impact of Group Reminiscence on Cognitive and Mental Health in Older Adults."

Participants Signature.

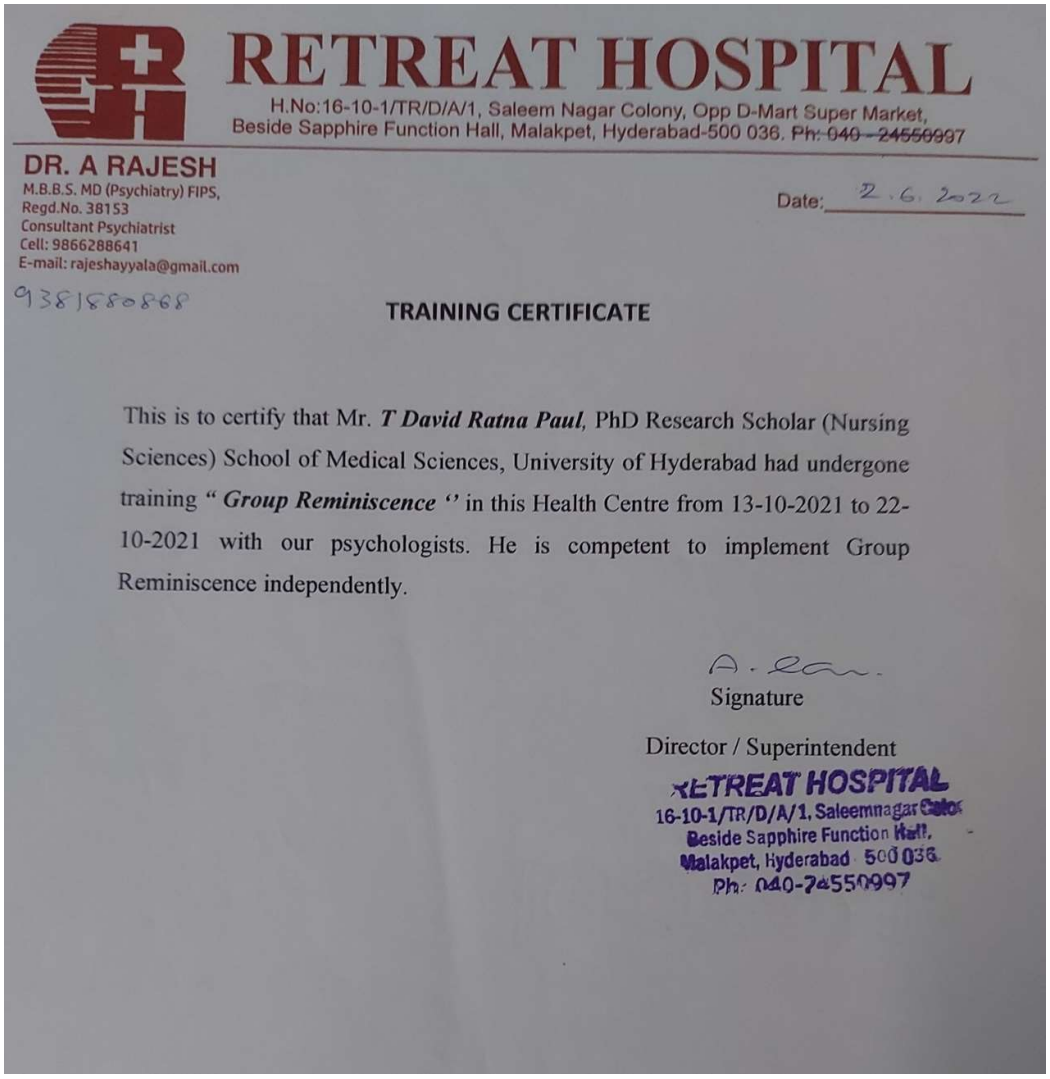
Spouse/ Family member/ Guardian Signature.

Name of the Principal investigator & institution and contact details:

Name of the supervisor and institution.

Appendix-D

Group Reminiscence Training certificate



RETREAT HOSPITAL

H.No:16-10-1/TR/D/A/1, Saleem Nagar Colony, Opp D-Mart Super Market,
Beside Sapphire Function Hall, Malakpet, Hyderabad-500 036. Ph: 040 - 24550997

DR. A RAJESH
M.B.B.S. MD (Psychiatry) FIPS,
Regd.No. 38153
Consultant Psychiatrist
Cell: 9866288641
E-mail: rajeshayyala@gmail.com
9381880868

Date: 2.6.2022

TRAINING CERTIFICATE

This is to certify that Mr. ***T David Ratna Paul***, PhD Research Scholar (Nursing Sciences) School of Medical Sciences, University of Hyderabad had undergone training " ***Group Reminiscence*** " in this Health Centre from 13-10-2021 to 22-10-2021 with our psychologists. He is competent to implement Group Reminiscence independently.

A. Rajesh.
Signature

Director / Superintendent

RETREAT HOSPITAL
16-10-1/TR/D/A/1, Saleemnagar Colony
Beside Sapphire Function Hall,
Malakpet, Hyderabad 500 036.
Ph: 040-24550997

Appendix E

Study Measurement (Tools and Techniques)

Demographic Information

1 Gender

1.1 Men 1.2 Women 1.3 Others

2 Age

2.1 60-70 2.2 71-80 2.3 81-90 2.4 91 and above

3. Marital Status

3.1 Married 3.2 Widow/Widower 3.3 Divorced/Separated
3.4 Never Married

4. Education

4.1 No formal Education 4.2 Primary Education/Secondary Education
4.3 High School 4.4 College/University

5. Religion

5.1 Hindu 5.2 Christian 5.3 Muslim

6. Income

6.1 Government Pension 6.2 Son 6.3 Daughter 6.4 Self/Spouse
6.5 others (Specify)

7. Type of Family

7.1 Nuclear Family 7.2 Joint Family

8. No of Children

8.1 None 8.2 One 8.3 Two 8.4 Three and More

9. Financial Stability

9.1 Have enough money to meet daily needs
9.2 Need additional support to meet needs
9.3 Struggling to meet daily needs

10. How frequently Speak with children

10.1 Frequently 10.2 Once in a week
10.3 Twice in a week 10.4 Once in a month 10.5 Rarely

11. Current Health

11.1 Excellent 11.2 Good 11.3 Fair 11.4 Poor

12. Family support

12.1 Excellent 12.2 Good 12.3 Fair 12.4 Poor

13. Social support

13.1 Excellent 13.2 Good 13.3 Fair 13.4 Poor

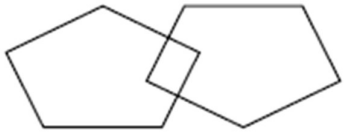
14 Leisure time activity

14.1 Watching TV 14.2 Gardening
14.3 Reading Newspaper/ Books 14.4 Any other

15. Rapport with neighbours

15.1 Almost every day 15.2 Often 15.3 Sometimes 15.4 Rarely 15.5 Never

Mini Mental Status Exam (MMSE)

Maximum Score	Patient's Score	Questions
5		"What is the year? Season? Date? Day of the week? Month?"
5		"Where are we now: State? County? Town/city? Hospital? Floor?"
3		The examiner names three unrelated objects clearly and slowly, then asks the patient to name all three of them. The patient's response is used for scoring. The examiner repeats them until patient learns all of them, if possible. Number of trials: _____
5		"I would like you to count backward from 100 by sevens." (93, 86, 79,72, 65, …) Stop after five answers. Alternative: "Spell WORLD backwards." (D-L-R-O-W)
3		"Earlier I told you the names of three things. Can you tell me what those were?"
2		Show the patient two simple objects, such as a wristwatch and a pencil, and ask the patient to name them.
1		"Repeat the phrase: 'No ifs, ands, or buts.'"
3		"Take the paper in your right hand, fold it in half, and put it on the floor." (The examiner gives the patient a piece of blank paper.)
1		"Please read this and do what it says." (Written instruction is "Close your eyes.")
1		"Make up and write a sentence about anything." (This sentence must contain a noun and a verb.)
1		"Please copy this picture." (The examiner gives the patient a blank piece of paper and asks him/her to draw the symbol below. All 10 angles must be present and two must intersect.) 

Scoring

24-30	No cognitive impairment
18-23	Mild cognitive impairment
0-17	Severe cognitive impairment

THE WORLD HEALTH ORGANIZATION QUALITY OF LIFE -BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. Please choose the answer that appears most appropriate. If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last four weeks.

S.No		Very poor	Poor	Neither poor nor good	Good	Very good
1	How would you rate your quality of life?	1	2	3	4	5
		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2	How satisfied are you with your health?	1	2	3	4	5
	The following questions ask about how much you have experienced certain things in the last four weeks.					
		Not at all	A little	A moderate amount	Very much	An extreme amount
3	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1
4	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5	How much do you enjoy life?	1	2	3	4	5
6	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7	How well are you able to concentrate?	1	2	3	4	5
8	How safe do you feel in your daily life?	1	2	3	4	5
9	How healthy is your physical environment?	1	2	3	4	5
	The following questions ask about how completely you experience or were able to do certain things in the last four weeks.					
		Not at all	A little	Moderately	Mostly	Completely
10	Do you have enough energy for everyday life?	1	2	3	4	5
11	Are you able to accept your bodily appearance?	1	2	3	4	5
12	Have you enough money to meet your needs?	1	2	3	4	5
13	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5
		Very poor	Poor	Neither poor nor good	Good	Very good
15	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16	How satisfied are you with your sleep?	1	2	3	4	5
17	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18	How satisfied are you with your capacity for work?	1	2	3	4	5
19	How satisfied are you with yourself?	1	2	3	4	5
20	How satisfied are you with your personal relationships?	1	2	3	4	5
21	How satisfied are you with your sex life?	1	2	3	4	5
22	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24	How satisfied are you with your access to health services?	1	2	3	4	5
25	How satisfied are you with your transport?	1	2	3	4	5
	The following question refers to how often you have felt or experienced certain things in the last four weeks					

		Never	Seldom	Quite often	Very often	Always
26	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1

	Equations for computing domain scores	Raw score	Transformed scores*	
			4-20	0-100
Domain 1	(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18	a. =	b:	c:
Domain 2	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26)	a. =	b:	c:
Domain 3	Q20 + Q21 + Q22	a. =	b:	c:
Domain 4	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25	a. =	b:	c:

Geriatric Depression Scale (Short Form)

Participant Name/ID No: Date:

Instructions: Choose the best answer for how you have felt over the past week:

Questions	Answer
1. Are you basically satisfied with your life?	YES / NO
2. Have you dropped many of your activities and interests?	YES / NO
3. Do you feel that your life is empty?	YES / NO
4. Do you often get bored?	YES / NO
5. Are you in good spirits most of the time?	YES / NO
6. Are you afraid that something bad is going to happen to you?	YES / NO
7. Do you feel happy most of the time?	YES / NO
8. Do you often feel helpless?	YES / NO
9. Do you prefer to stay at home, rather than going out and doing new things?	YES / NO
10. Do you feel you have more problems with memory than most?	YES / NO
11. Do you think it is wonderful to be alive now?	YES / NO
12. Do you feel pretty worthless the way you are now?	YES / NO
13. Do you feel full of energy?	YES / NO
14. Do you feel that your situation is hopeless?	YES / NO
15. Do you think that most people are better off than you are?	YES / NO

Scoring:

0-4 indicate normal

5-8 indicate mild depression

9-11 indicate moderate depression

12-15 indicate severe depression

Group Reminiscence Intervention

Introduction:

Reminiscence is a psychological therapy that encourages individuals, especially older adults, to remember and discuss memories from their lives. It helps improve well-being by allowing people to reflect on their past experiences, find meaning in their memories, and enhance mood, self-esteem, social connections, and overall quality of life. It has proven beneficial for individuals with dementia, depression, anxiety, and other conditions, promoting a sense of personal identity and a feeling of being understood and valued.

Group reminiscence with themed discussions involves selecting specific topics for the group to talk about. Themes can range from personal experiences to cultural or historical events, like childhood memories, life events, holiday traditions, or popular music/movies from an era. Participants share memories and experiences related to the theme, guided by open-ended questions from the facilitator. They can also share relevant photographs or memorabilia, making the reminiscence more interactive.

Benefits of group reminiscence with themes:

Group reminiscence with themes has been shown to have numerous benefits, including:

1. Improved social connectedness
2. Increased cognitive function
3. Enhanced mood and well-being:
4. Increased engagement and participation:
5. Promotes cultural competency

Steps to Develop of group reminiscence:

Step	Explanation
Identify the Goals	Define clear objectives for the group reminiscence intervention. For older adults with cognitive impairment and depression, goals may include improving cognitive function, alleviating depressive symptoms, fostering a sense of connection, and enhancing overall well-being.
Select the Group Members	Identify individuals who are suitable for the group. These may include older adults experiencing cognitive impairment and depression. Assess their cognitive and emotional status to ensure they can actively engage in the sessions.
Plan the Sessions with Themes	Develop a 12-week schedule, each week with a specific theme. Themes can encompass topics like "Childhood Memories," "Hobbies and Interests," "Nature and Environment," and

	more. Themes should be chosen to stimulate memories and encourage engagement.
Create a Safe and Supportive Environment	Establish a safe and empathetic atmosphere within the group. Ensure participants understand the importance of respecting one another's thoughts and feelings. Promote confidentiality and a non-judgmental space.
Facilitate the Sessions	As the facilitator, your role is to guide the sessions. Encourage active participation and employ appropriate prompts and cues for individuals with cognitive impairment. Use a person-centered approach to make everyone feel valued and heard.
Evaluate the Sessions	After each session, evaluate its success in achieving the intervention's goals. Collect feedback from participants to understand their experiences, whether depressive symptoms have improved, and whether cognitive engagement has increased. Use this feedback to refine subsequent sessions.

Themes to conduct Group Reminiscence

Theme	Explanation
Childhood Memories	Recalling and sharing memories from early life, including significant events, family, and favorite childhood activities.
Family and Children	Reflecting on the dynamics of family life, parenting, and the experiences related to raising children.
Food and Recipes	Discussing favorite foods, recipes, cooking experiences, and the role of food in personal and family life.
Holidays and Celebrations	Sharing stories and experiences related to holidays, special occasions, and cultural celebrations.
Hobbies and Interests	Exploring personal hobbies, interests, and pastimes that have brought joy and fulfilment.
Friends and Relationships	Discussing the significance of friendships and various relationships in one's life.
Hometown Memories	Recounting memories associated with one's place of origin, local events, and the evolution of the hometown.
Nature and Environment	Sharing experiences and memories related to nature, outdoor activities, and environmental awareness.
Attention and Memory	Engaging in exercises to improve attention and memory skills, promoting cognitive health.
Orientation	Participating in exercises that improve orientation skills, enhancing one's sense of time, place, and person.

Abstraction	Challenging cognitive abilities through exercises that encourage abstract thinking, problem-solving, and creativity.
Comprehension	Enhancing the ability to understand, interpret, and communicate complex ideas, stories, and information.

Steps to implement Group reminiscence intervention

Assessment Phase	Involved gathering information, conducting interviews, using standardized assessments, and consulting relevant data.
Planning Phase	Goals and objectives were established, and strategies are designed to address the specific needs of the group involved.
Engagement Phase	Building rapport and trust are essential, and participants are informed about the intervention's purpose and potential benefits.
Implementation Phase	The intervention took place according to the planned strategies 12 weeks with 12 themes for experimental groups
Monitoring and evaluation	Progress was monitored and evaluated to determine the effectiveness of the intervention.
Closure and Follow-up	Participants are provided with support and guidance to transition successfully after the intervention ends.
	6- Months follow-up phase was conducted to ensure the sustained impact of the intervention





Appendix-F

Anti-Plagiarisms Report

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University of Hyderabad

Hyderabad 500046

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Research Supervisor

13/11/2023

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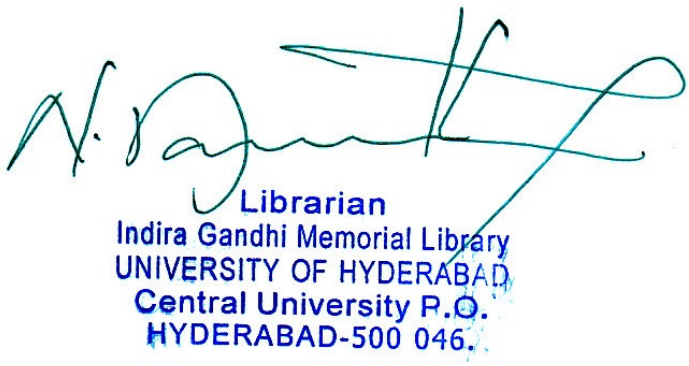
by T David Ratna Paul



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