

Research Article

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

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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

Introduction

Globally, the elderly population is increasing, and India's population aged over 60 years is about 9.4%. This is similar to that in Indonesia but lower than that in China (12.4%). India currently has over 125.6 million older adults, and projections estimate that this population will increase to 316.7 million by 2050.¹ This demographic shift is expected to lead to a higher prevalence of morbidity and disability, particularly cognitive impairment.² Inadequate social support and lack of quality interpersonal relationships predispose the elderly to loneliness and isolation, adversely affecting mental health in later life, thereby leading to depression and dementia.^{3,4} Cognitive impairment in older adults, including dementia and minor impairments, is characterised by memory loss, learning problems, and a decline in focus, resulting in reduced quality of life, increased mortality, and risk of dementia.^{5,6}

Pharmacological (drug therapy) and non-pharmacological methods (psychotherapy) are two commonly used approaches for treating cognitive decline, however, addressing mental health in rural India remains a challenge due to lack of resources and unavailability of specialists. Most pharmacological medicines cause adverse effects. Reminiscence therapy is an alternative to pharmacotherapy to enhance cognitive function.^{7,8} It is a non-pharmacological intervention in which the recollection of particular experiences such as particular events, reciprocal actions,

and accomplishments are shared with others. The efficacy of reminiscence in cognitive impairment among older adults has been well recognised.⁹⁻¹⁴

Group reminiscence is a nurse-initiated therapy that has the benefit of therapeutic, social and recreational activities for older adults.¹⁵ Group reminiscence has been a valuable non-pharmacological therapy for older adults.¹⁶ It also serves as an alternative to more established therapy approaches for enhancing cognition. It is an appealing, non-pharmacological and simple-to-implement solution.⁸

There is little literature on non-pharmacological therapies for mental health and cognitive impairment in rural communities in India, where many older adults remain undiagnosed with geriatric depression and cognitive impairment due to a lack of specialists and attention to mental healthcare. Moreover, in some communities, little attention is paid to mental healthcare. This study aims to evaluate the effects of group reminiscence on cognitive impairment among rural older adults and to implement a novel protocol for improving cognitive function through group reminiscence. Identifying mental health problems among older adults at the earliest and providing psychosocial interventions not only supports them emotionally but also helps to improve their quality of life.

Methods

Study Design

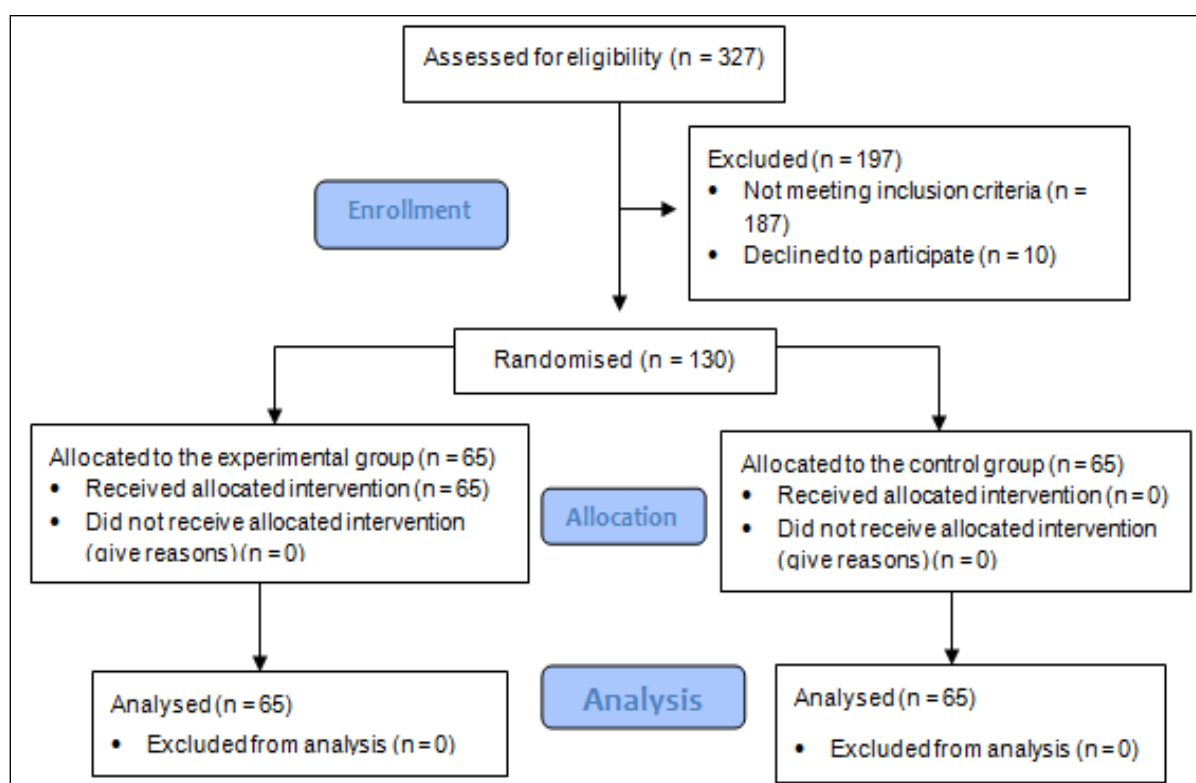


Figure I. Consort Flow Diagram of Selection of Participants

This is a single-blind, randomised controlled trial with two groups conducted in Telangana, between April 2022 and December 2022. Participants were selected randomly at Patancheru Rural Health Center, Sangareddy, Telangana. The area was located outside the city where elderly people lack access to mental healthcare. Population screening was done to frame the sample size and participants were recruited through random sampling by lottery method.

A house-to-house survey was undertaken in the selected rural community, and out of 327 older adults screened for participation, 130 healthy older adults who met the inclusion criteria (were aged 60 years and above, had mild cognitive impairment, and were willing to participate in this study) were recruited. Individuals with severe cognitive impairment, severe mental health problems, severe hearing loss, recent medical or surgical intervention, and recent participation in any cognitive training were excluded. The recruitment of the participants has been presented in Figure 1.

The sample size was calculated based on the population proportion of older adults in Telangana. The older adult population proportion in Telangana is 0.09%, in a population size constituting 35 million.

$$\begin{aligned} \text{Sample size} &= \frac{Z^2 * p (1-p)/e^2}{1 + \left(\frac{Z^2 * p}{e^2 N} \right)} \\ &= \frac{1.96^2 * 0.09(1-0.09)/0.05^2}{1 + \left(\frac{1.96^2 * 0.09(1-0.09)}{0.05^2 * 35193978} \right)} = 126 + 4 = 130 \end{aligned}$$

Randomisation and Blinding

Randomisation ensures that there is an equal probability for each participant to be assigned to either the experimental or control group in a study. This is also called random assignment of subjects and involves the placement of study subjects on a random basis, thus eliminating the chances of systematic bias. Simple randomisation is the most pure and basic randomisation method and it varies. In this study, we utilised one of the simple randomisation methods called the slips of paper (Lottery) method. The names of the selected participants were listed on the slips of paper, which were put in a bowl and then drawn lots. The initial designated numbers of subjects were placed in the experimental group and the rest were assigned to the control group. This study was a single-blind study where only the participants were blinded. It was not possible to blind the researcher due to the nature of the study.

Data Collection and Instruments

Individual assessments were carried out using a socio-demographic questionnaire and to screen cognitive

impairment, mental status examination^{17,18} was used with various areas of cognitive functions such as orientation, registration, recall, attention and calculation, language and comprehension and demonstrates high sensitivity (0.81) and specificity (0.60) with a high correlation of $r = 0.86$.¹⁹ A score of 18-23 out of 30 was chosen as the cut-off value to detect mild cognitive impairment. Pre-treatment assessment was performed two weeks before the beginning of the intervention, and post-treatment assessment was performed one week after the intervention.

Intervention

Group reminiscence was applied to the experimental group in a 60-minute session once a week for 12 weeks. In the first session, the participants were introduced to the concept of group reminiscence. This application of the intervention was completed on a small sample as a pilot study and the results were statistically significant. Props like photographs, charts and music from film clips were used to trigger a memory of identity. This intervention protocol was evaluated and validated by a psychiatrist, three psychologists and one nursing professor. Intervention protocol was given by the investigator, who trained with the psychologists and the supervisor. Through group reminiscence, older adults were encouraged to remember their positive experiences and achievements. The researcher provided a supportive approach to ensure interaction and sharing between the participants and made them feel comfortable. To keep in touch with the control group, we provided general health education.

Data Analysis

The data from this study were analysed using the IBM SPSS-25 software. To compare sociodemographic factors in both groups, the chi-square and Mann-Whitney tests were employed. For the mini-mental status examination variable, means, standard deviations, and ranges were computed. Wilcoxon signed-rank test and Mann-Whitney test were used to compare the values within the groups and between the groups and $p < 0.05$ was declared statistically significant.

Ethical Considerations

Ethical approval was obtained (Approval No. UH/IEC/2021/34) from the University of Hyderabad Ethics Committee. All participants provided written consent after indicating that they fully understood the objective of the study. This trial has been registered at <http://ctri.nic.in> (approval no is CTRI/2021/12/038562). It was registered prospectively. The researcher informed older adults about confidentiality and privacy.

Results

The study was conducted on a group of 130 older adults

(67.4% female and 32.3% male participants) with mild cognitive impairment. The age of the participants ranged from 60 to 81 years, with a mean age of 68.5 (6.1) years. Table 1 shows the basic demographic details of the assessed older adults featuring the mean age, gender, marital status, education and current health status. The post-intervention findings of cognitive impairment in both groups showed significant improvement in the experimental group as compared to the control group.

Table 2 shows the pre-intervention and post-intervention within-group analysis of the Mental Status Examination. As the data were not normally distributed, the Wilcoxon

test was used to compare the group reminiscence within the experimental and control groups. The experimental group had a pre-intervention mean value of 19.83 with a standard deviation of 1.14 and a post-intervention mean value of 20.62 with a standard deviation of 1.52. The Z value was -5.47 and p value was less than 0.01. For the control group, the pre-intervention mean value was 19.45 with a standard deviation of 1.24, the post-intervention mean value was 19.31 with a standard deviation of 1.16, the Z value was -1.107, and the p value was greater than 0.05. It indicated that group reminiscence helped the older adults in the experimental group to enhance their cognitive function and this difference was statistically significant.

Table 1. Descriptive Characteristics of the Older Adults in the Experimental and Control Groups

Sociodemographic Characteristics	Experimental Group (n = 65)	Control Group (n = 65)	Total	χ^2	Z	p
Age (years) Range (60–81)	68.31 ± 5.74	68.88 ± 6.47	68.5 ± 6.1	-	-0.28	0.77
Gender	-	-	-	0.14	-	0.7
Male	20 (30.8)	22 (34.0)	42 (32.3)	-	-	-
Female	45 (69.2)	43 (66.0)	88 (67.4)	-	-	-
Marital status	-	-	-	0.31	-	0.71
Married	42 (64.6)	45(69.2)	87 (67.0)	-	-	-
Widowed	23 (35.4)	20 (30.8)	43 (33.0)	-	-	-
Education	-	-	-	5.70	-	0.10
No formal education	24 (37)	36 (55.4)	60 (46.1)	-	-	-
Primary education	36 (55.4)	23 (35.4)	59 (45.9)	-	-	-
College/ university	4 (6.1)	4 (6.1)	8 (6.0)	-	-	-
Higher education	1 (1.5)	2 (3.1)	3 (2.0)	-	-	-
Current health	-	-	-	0.96	-	0.63
Good	21 (32.0)	17 (26.0)	38 (29.2)	-	-	-
Fair	22 (34.0)	21 (32.0)	43 (33.1)	-	-	-
Poor	22 (34.0)	27 (42.0)	49 (31.7)	-	-	-

Table 2. Pre-post Comparison within the Groups in Analysis of Mental Status Examination

MSE	Pre-intervention Mean and SD	Post-intervention Mean and SD	Z Value	p Value
Experimental	19.83 (1.41)	20.62 (1.52)	-5.47	0.000
Control	19.45 (1.24)	19.31 (1.16)	-1.107	0.268

Table 3. Pre-post Comparison between the Groups in Analysis of Mental Status Examination

Groups	Mean Difference	Z Value	p Value	Effect Size
Experimental	0.79 (0.82)	-6.174	0.000	-0.54
Control	0.14 (0.83)			

Table 3 shows the pre-intervention and post-intervention analysis of mean values of the MSE Mental Status Examination between the experimental and control groups. The mean difference in the experimental group was 0.79 with a standard deviation of 0.82, whereas the mean difference in the control group was 0.14 with a standard deviation of 0.83. 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. This concludes that group reminiscence was effective in improving cognition among older adults in rural South India.

Discussion

The current study was undertaken with healthy elderly from rural areas to assess the effectiveness of group reminiscence on cognitive impairment. The findings of the study support the notion that group reminiscence improves cognition in older adults. Reminiscence therapy is one of the most important non-pharmacological therapies. First used in the 1980s, psychologists and nurses were trained to use this intervention. Being a straightforward psychological intervention with minimal application risk to older adults, group reminiscence has a reputation for its practical benefits. It is believed that the group discussions and the memory recall exercise have a favourable impact on the cognitive function scores. According to the findings from this study as well as those from previous studies, reminiscence-promoting activities for older adults were found to benefit cognitive function.

To the best of our knowledge, this is the first randomised controlled trial that has documented the use of group reminiscence as a non-pharmacological intervention for improving cognitive health in a rural community in Telangana. Group reminiscence is a crucial non-pharmacological intervention for promoting mental and cognitive well-being. The research outcomes suggest that the collective recollection approach, reminiscence, could potentially enhance cognition. The results of this study align with previous research that demonstrated enhanced cognitive function through group reminiscence.²⁰⁻²² It has been pointed out that attending group reminiscences allows older adults to use their memory to remember happy events from the past.²³

Group reminiscence therapy is effective when the researcher involved displays good questioning skills and engages well with the group. Good questioning and listening skills are very important and in the absence of such skills, participants get anxious and tense. Group reminiscence is helpful in strengthening the bonds within the family and with caregivers in the rural community. Extensive work on this process has been carried out outside India and there is ample literature to substantiate it. Reminiscence can

also be just a fun activity that even older adults without memory impairment can engage in. It is not the outcome that is important; the process and the joy that the person experiences while they are engaged in it are as important.

The goal of group reminiscence is to enhance cognitive function and help to improve mood. It helps to keep participants socially engaged and to provide meaningful activity for the elderly. Group reminiscence is about pulling older adults in, making them feel comfortable and enabling them to share some of the things they recall. It is offered to older adults who are living in rural communities, especially those with cognitive and mental health impairments. The beauty of this group reminiscence is that you can use it with any theme and it will still enable the promotion of non-pharmacological interventions among older adults.

Group reminiscence is extremely important, especially for elderly assisted living. Most elderly want to remember the past. They would like to have things from their past around them because such things trigger wonderful memories and increase their self-esteem and positive self-image. It brings happiness and satisfaction to their lives. Memories from the past can bring great joy, and thinking about one's happier times and one's younger life brings a sense of continuity in most people.

Group reminiscing is the process of restoring a person by focusing on their history. It recalls their past. It might not always improve other aspects of a person's life, but will undoubtedly improve their cognition. Getting adequate care and their physical needs being taken care of is often insufficient. Helping the elderly connect with themselves and interact with others greatly enhances their quality of life. They feel motivated to converse and interact with others and share their happy moments. When they have someone to engage in conversations about their lives in the past, they recollect how they were able to accomplish what they did and this makes them feel important and happy. Group reminiscing focuses on the lives and recollections of the participants and includes narratives, photographs and letters. It describes a person's life narrative.

Limitations and Recommendations

Due to constraints of funding resources, further follow-up in the rural community could not be carried out. The present study included participants from rural communities only and was limited to 130 older adults. Similar studies can be replicated among ageing adults from varying geographical regions and social backgrounds. In addition, enlisting the services of healthcare providers, especially nurses, as key role players in the conduct of such interventions can help in promoting healthy ageing. It is also recommended that training the healthcare providers in group reminiscence would also prove extremely beneficial.

Conclusion

The result of the study indicates that cognitive functions are improved significantly with the help of group reminiscence among older adults and can reduce the risk of dementia. This approach may serve as a useful model for future research on non-pharmacological therapies in rural communities. It reveals the importance of raising awareness about the use of group reminiscence. The study will be helpful in designing geriatric healthcare programmes for rural older adults, especially in remote areas where psychiatric healthcare facilities are scarce. Implementing this intervention can improve cognitive function, enhance the quality of life of older adults, and eventually lessen the burden on caregivers. This study has the potential to reform the development of geriatric healthcare programmes in rural community settings.

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Conflict of Interest: None

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