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An experimental study examining the impact of humor therapy on depression level and overall quality of life in the elderly population

Sushil Kumar Gayakwad[1]*, Dr. Devraj Singh Chouhan[2]

[1]Ph.D. Scholar, Faculty of Nursing, Parul University, Vadodara, Gujarat, India
[2]Ph.D. Supervisor, Faculty of Nursing, Parul University, Vadodara, Gujarat, India

Corresponding Author: SushilKumar Gayakwad. **Email:** gayakwad89@gmail.com

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Background

Several studies have demonstrated that humor therapy plays a vital role in maintaining balance across the biological, psychological, social, and cultural dimensions of life among older adults. Purposeful laughter promotes positive emotions, enhances happiness, and contributes to overall well-being. Furthermore, empirical evidence suggests that humor therapy can significantly reduce symptoms of depression and consequently improve the quality of life in the elderly population.

Methodology

A true experimental two-group pretest–post-test design was adopted for the study, conducted in selected community areas and old-age homes of the Sabarkantha district, Gujarat. A total of 200 elderly individuals (aged 60 years and above) exhibiting symptoms of depression were recruited through purposive sampling and randomly assigned to experimental and control groups, each comprising 100 participants. The experimental group received humor therapy sessions three times per week for a duration of three weeks, while the control group continued to receive standard care. Data were collected using a validated tool developed with expert input (Cronbach's $\alpha = 0.84$), along with standardized instruments such as the Geriatric Depression Scale (GDS) and the World Health Organization Quality of Life (WHOQOL) scale. Statistical analysis was performed using both descriptive and inferential methods, including paired and unpaired t-tests and Chi-square tests. Ethical approval for the study was obtained from the Medistar Hospital Ethics Committee (Approval No. P.NO/EC/04/2024).

Results

Post-intervention, the experimental group demonstrated a significant reduction in depression scores, decreasing from 18.76 ± 2.89 to 10.9 ± 1.78 ($p < 0.05$), whereas the control group showed only a marginal change. Notably, 59% of participants in the experimental group achieved normal depression scores following the intervention. In addition, the experimental group reported significantly higher quality of life scores (55.96 ± 5.93) compared to the control group (42.40 ± 6.28; $p < 0.05$). Participants in the experimental group also exhibited a more favorable attitude toward humor therapy, reflected in greater improvements in both quality of life and depression reduction. Furthermore, depression levels were found to be significantly associated with demographic variables such as age, sex, marital status, occupation, income, religion, and source of information.

Conclusion

Humor therapy was found to reduce depression levels, enhance positive attitudes toward the use of humor, and improve overall quality of life experiences among older adults. These findings suggest that humor therapy should be integrated into routine care for the elderly to promote psychological well-being, strengthen coping abilities for managing depressive situations, and ultimately enhance their quality of life.

Introduction

"A smile is the shortest distance between two people." – Victor Borge

Aging is a natural and inevitable process that often heightens the risk of depression among the elderly, primarily due to physiological, psychological, and social changes. With the elderly population rapidly increasing both globally and in India, mental health in later life has emerged as a significant public health concern. Humor and laughter represent safe, non-invasive, and cost-effective interventions that can

help alleviate depressive symptoms, enhance life satisfaction, and promote overall well-being. Encouraging purposeful laughter, therefore, serves as an effective strategy to foster happiness, strengthen emotional resilience, and improve the quality of life among older adults.

Objectives

- To determine the prevalence of depression among elderly residents (aged ≥60 years) in selected community areas and old-age homes.
- To evaluate the effectiveness of humor therapy in reducing depression levels and improving the quality of life among elderly participants by comparing before and after intervention scores.
- To find out the association between the level of depression and quality of life with the selected variables among the elderly in the experimental group and control group.
- To assess the level of satisfaction with humor therapy among elderly participants in the experimental group.

Methodology

Study Design:

A descriptive research design was employed to assess the prevalence of depression among the elderly using the Geriatric Depression Scale (GDS). In addition, a true experimental research design was utilized to evaluate the effectiveness of humour therapy on depression, quality of life, and attitudes toward humor therapy. This design facilitated comparison between an experimental group that received the intervention and a control group that did not receive any humor-based intervention.

Study Setting and Duration: The study was conducted among elderly individuals residing in community settings across urban and rural areas and selected old-age homes within the Sabarkantha district. Data collection was carried out over a period of six months.

Population and Sampling: The study population consisted of elderly individuals with depression residing in selected old-age homes and community areas of the Sabarkantha district. A purposive sampling technique was employed to select the study settings and participants. A true experimental design was adopted, and the selected settings were randomly assigned to either the experimental group or the control group.

Inclusion criteria

- Were aged 60 years and above.
- Were able to speak and understand Gujarati or English.
- Expressed willingness to participate in the study.
- Had a depression score greater than 11 as measured by the Geriatric Depression Scale (GDS).

Exclusion criteria

- Elderly individuals with sensory deficits such as complete blindness, total hearing loss, severe cognitive impairment, or diagnosed dementia.
- Those who were critically ill or unable to communicate effectively.

A total of **200** participants were selected for the study and divided equally into two groups:

Experimental Group (n = 100): Received humor therapy as the intervention.

Control Group (n = 100): Received routine care and were observed without any humor-based intervention.

Ethical Considerations:

Ethical approval for the study was obtained from the Medistar Hospital Ethics Committee, Himmatnagar, Gujarat (Approval No. P.NO/EC/04/2024, dated 30/04/2024). All participants were clearly informed about the purpose of the study, the voluntary nature of their participation, and their right to withdraw at any stage without any consequences. Written informed consent was obtained from each participant prior to enrollment. Confidentiality and anonymity were strictly maintained, and all study procedures were carried out in accordance with the ethical principles outlined in the Declaration of Helsinki.

Intervention:

The humor therapy program comprised the following four components:

1. **Spontaneous Humor** – Naturally occurring humor generated through conversations, jokes, and situational exchanges.
2. **Simulated Laughter** – Guided laughter exercises such as laughter yoga, rhythmic clapping, and breathing techniques.
3. **Media-Based Humor** – Exposure to humorous content including videos, films, and cartoons.
4. **Therapeutic Programs** – Structured group-based interventions facilitated by trained individuals, incorporating activities such as clown performances, humor workshops, and storytelling sessions.

Each session was conducted in small groups of 10–12 elderly participants to ensure personalized attention, encourage active participation, and provide opportunities for discussion and clarification.

Data Collection Tools

Data Collection Tools

A standardized, structured, and validated tool was developed to collect data in alignment with the study objectives. The instrument comprised four main sections as described below:

Section I: Demographic Data

This section gathered information on participants' age, sex, education, religion, marital status, spouse's status (if residing in an old-age home), occupation, source of income, monthly income, number of children, type of family, and duration of stay in the old-age home.

Section II: Clinical Variables

This section included details regarding participants' medical illnesses, medication history for major conditions, hospitalizations within the last five years, treatment-seeking behaviour, history of smoking or alcohol use, and any prior training or information related to relaxation techniques.

Section III: Geriatric Depression Scale (GDS)

Depression levels were assessed using Yesavage's standardized 30-item Geriatric Depression Scale (GDS). The scale consists of dichotomous ("Yes/No") questions designed to measure depressive symptoms in the elderly. Each depressive response was scored as one point. Specifically, items 1, 5, 7, 9, 15, 19, 21, 27, 29, and 30 were scored 1 for a "No" response, while all other items

were scored 1 for a "Yes" response.

The total score ranged from 0 to 30, with higher scores indicating greater severity of depression. Interpretation of scores was as follows:

0–10: Normal,11–17: Mild depression,>17: Severe depression

Section IV: WHO Quality of Life Scale

The WHO QOL Scale, a 26-item abbreviated version of the WHOQOL-100, was used to assess quality of life. The tool follows the same scoring principles as the original version, with certain modifications: facet scores are not reported, mean substitution is allowed for missing items in Domain 1 (Physical Health) and Domain 4 (Environment) if only one item is missing, and three items require reverse scoring.

The instrument generates scores in four domains—Physical Health, Psychological Health, Social Relationships, and Environment—along with two additional items assessing overall quality of life and general health. Higher scores reflect a better quality of life.

Section V: Rating Scale to Assess Satisfaction with Humor Therapy

To assess participants' satisfaction with humor therapy, a 20-item researcher-developed scale was utilized. The items evaluated clarity of explanations, researcher's approach, adequacy of session time, comprehensibility, usefulness, participant engagement, and program organization. Responses were rated on a four-point Likert scale: **Highly Satisfied (4), Satisfied (3), Dissatisfied (2), Highly Dissatisfied (1)**. The total score ranged from 0 to 60, which was converted into percentages and categorized as follows: Highly Satisfied: 61–80%, Satisfied: 41–60%, Dissatisfied: 24–40%, Highly Dissatisfied: <25%

Tool Validation and Reliability

The tool was developed through an extensive review of relevant literature and in consultation with subject matter experts. Content validity was established by a panel of 10 professionals, including specialists in mental health nursing, psychiatry, and therapy. Feedback from six experts was incorporated to enhance the tool's clarity, cultural appropriateness, and logical sequencing. The final version was reviewed and approved by the research supervisor. Reliability of the tool was assessed using the test–retest method with a structured attitude scale, yielding a reliability coefficient of **0.89**, which indicates a high level of reliability and internal consistency.

Demographic Characteristics of Participants

Experimental Group: In the experimental group, the majority of elderly participants were aged **60–70 years**, with **55%** between **60–65 years** and **45%** between **65–70 years**. The group comprised **63% males** and **37% females**. Nearly half of the participants (**48%**) had completed secondary education, while **11%** were illiterate. Most participants were **Hindu (88%)**, and living arrangements were evenly divided between the **community** and **old-age homes**. Regarding duration of stay, **28%** had resided for less than one year, whereas **52%** had stayed for more than two years. A majority of participants were **widowed (56%)**, and only **24%** were living with a spouse. About **38%** of the elderly reported having no children, while **34%** had more than two children. Most lived in **nuclear families (72%)**,

with **33%** owning their homes. Financially, **52%** had no personal income, while others relied on **pensions (23%)**, **savings (13%)**, or **family support (12%)**.

Control Group: In the control group, most participants were also aged **60–70 years**, predominantly **male (68%)** and **Hindu (86%)**. Educational attainment was similar to the experimental group, with **48%** having completed secondary education. Half of the participants resided in the **community**, and half in **old-age homes**, with **39%** having stayed for more than two years. A majority were **divorced (57%)**, while only **14%** lived with a spouse. Regarding family structure, **81%** lived in **nuclear families**, and **78%** did not own homes. Financially, **53%** had no income, while **24%** depended on **pensions**, and the remainder relied on other sources of financial support.

Clinical Characteristics of Participants

In both groups, the majority of elderly participants had **no history of taking medications for major illnesses** (72% in the control group and 67% in the experimental group) and **no previous history of hospitalization** (75% and 77%, respectively). Most participants **frequently utilized medical facilities** as part of their treatment-seeking behaviour (85% in the control group and 89% in the experimental group). The majority were **non-alcoholic** (80% and 85%) and had **no prior training in relaxation techniques** (86.66% and 73.33%). Additionally, most participants were **non-smokers** (67% in the control group and 59% in the experimental group), and a considerable proportion **reported no existing medical illness** (36% and 42%, respectively).

Depression Scores

Pre- and post-intervention depression levels were assessed using the standardized Geriatric Depression Scale (GDS). At baseline, both the experimental and control groups exhibited comparable levels of depression.

Group	N	Pre-test Mean ± SD	Post-test Mean ± SD	Calculated t	Table t(df=99 ,p=0.05)	Result
Experimental	100	18.11 ± 2.89	10.7± 1.78	17.63	1.98	Significant
Control	100	18.80 ±4.38	17.0. ±2.19	1.28	1.98	Not Significant)

Following the humor therapy intervention, the experimental group demonstrated a significant reduction in depression levels ($t = 17.63 > 1.98$, $p < 0.05$). Post-intervention, 73% of participants scored within the normal range, 25% showed mild depression, and only 2% remained in the severe depression category. In contrast, the control group exhibited no significant change, with 63% of participants remaining mildly depressed, 34% severely depressed, and only 3%

achieving normal scores (calculated t < table t).

Effectiveness of Humor Therapy on Quality of Life

Table 1: Comparison of Quality-of-Life Scores within Experimental and Control Groups

Domain	Group	Pre-test Mean ± SD	Post-test Mean ± SD	t value	p value
Physical Health	Experimental	43.35 ± 6.12	57.28 ± 5.84	9.79	<0.001***
	Control	44.10 ± 5.87	45.20 ± 6.02	1.18	0.287
Psychological	Experimental	37.42 ± 7.22	55.65 ± 6.18	10.56	<0.001***
	Control	38.18 ± 6.32	40.05 ± 7.04	1.12	0.266
Social Relationships	Experimental	41.05 ± 5.94	54.80 ± 5.71	9.76	<0.001***
	Control	42.12 ± 6.14	43.20 ± 6.15	1.05	0.302
Environmental Factors	Experimental	45.22 ± 6.35	59.12 ± 5.27	9.15	<0.001***
	Control	45.22 ± 6.48	46.33 ± 6.32	1.19	0.279
Overall QOL	Experimental	42.76 ± 6.36	56.66 ± 6.03	12.19	<0.001***
	Control	41.36 ± 5.11	43.40 ± 6.38	1.88	0.259

***p < 0.001 – highly significant

At baseline, both the experimental and control groups exhibited comparable **quality of life (QOL)** scores across the **physical, psychological, social,** and **environmental** domains, with most participants scoring within the **low to moderate range**. Following the intervention, the experimental group demonstrated a **significant improvement in overall QOL**, particularly in the **psychological** and **social relationship** domains. Participants reported greater life satisfaction, improved mood, and enhanced interpersonal interactions. In contrast, the control group showed **no significant change** across any of the domains. Statistical analysis confirmed that the **pre- to post-test improvement** in the experimental group was **highly significant** ($p < 0.001$), whereas the control group remained **statistically unchanged** ($p > 0.05$). Between-group comparisons further established that **humor therapy effectively enhanced the overall quality of life among the elderly**. In the experimental group, 82**%** of participants achieved **good** QOL scores, **16%** scored **average**, and only **2%** remained **poor**. Conversely, in the control group, **72%** continued to have **poor** QOL, **25%** were **average**, and only **3%** reached a **good** level.

The Level of Satisfaction Regarding Humour Therapy

Satisfaction with humour therapy was assessed in the experimental group using a structured 20-item rating scale

(maximum score = 80). Scores were categorized as follows:

Table 2: Distribution of Elderly by Level of Satisfaction with Humour Therapy (n = 200)

Level of Satisfaction	Score Range	Frequency (f)	Percentage (%)
Highly satisfied	61–80	82	80%
Moderately satisfied	41–60	18	20%
Dissatisfaction	≤40	0	0%
Total	-	100	100%

The mean satisfaction score among participants in the experimental group was 68.42 ± 5.86 (range: 55–78). The majority (74%) reported high satisfaction, while the remaining 26% indicated moderate satisfaction; none expressed low satisfaction. These findings suggest that humour therapy was well accepted and perceived as a highly beneficial and enjoyable intervention, promoting positive emotional experiences and engagement among the elderly.

Association Between Demographic and Clinical Variables with Depression

A Chi-square analysis was conducted to assess the association between demographic and clinical variables with **depression** and **quality of life (QOL)** among elderly participants.

Demographic Variables and Depression:

Significant associations were identified between depression levels and **age** (χ^2 = 6.83, p < 0.05), **gender** (χ^2 = 7.30, p < 0.05), **education level** (χ^2 = 6.80, p < 0.05), and **marital status** (χ^2 = 8.88, p < 0.05). However, no significant associations were found for **religion**, **place of residence**, **duration of stay**, **spouse residing in the old age home**, **number of children**, **type of family**, **source of income**, or **monthly income**.

Clinical Variables and Depression:

A significant association was also observed between depression and the **presence of medical illness** (χ^2 = 6.83, p < 0.05). No significant relationships were found for **history of major illness medications**, **hospitalization within the past five years**, **treatment-seeking behaviour**, **smoking or alcohol use**, or **prior relaxation training**.

Summary:

This study evaluated the **effectiveness of humour therapy** in reducing depression, enhancing quality of life (QOL), and fostering a positive attitude toward humour among elderly individuals. A **true experimental two-group pretest–post-test design** was employed, involving **200 elderly participants** from selected community areas and old age homes in **Sabarkantha district, Gujarat**. Participants were purposely selected and randomly assigned to either an **experimental group** (receiving humor therapy three times per week for three weeks) or a **control group** (receiving no intervention). The intervention, facilitated by trained nurses, incorporated **light stretching and breathing exercises**, **ice-breaker activities**, **structured laughter sessions** (including laughter yoga and clapping), and **sharing of jokes and personal humorous experiences**. Standardized instruments such as the **Geriatric**

Depression Scale (GDS), **WHO Quality of Life Scale (WHO QOL- BRIEF)**, and a **validated humour attitude scale** were used to measure outcomes. The results demonstrated **significant improvements** in the experimental group following humour therapy. The **mean QOL score** increased from **41.76 ± 6.36** to **55.96 ± 5.93** (p < 0.0001), while **mean depression scores** decreased from **18.76 ± 2.89** to **10.9 ± 1.78** (p < 0.0001). In contrast, the control group exhibited minimal change. Post-intervention, **59%** of the experimental group achieved **normal depression scores**, and **51%** attained a **good quality of life**, compared with only **1%** in the control group. Furthermore, **positive attitudes toward humor** were significantly higher in the experimental group (**68.42 ± 5.86**) compared to the control (**29.87 ± 2.84; p < 0.00001**). Chi-square analysis revealed significant associations between **depression** and selected **demographic variables** such as **age, gender, education, and marital status**, as well as with **clinical conditions**. Overall, humor therapy effectively **promoted laughter, social engagement, and optimism**, thereby reducing **loneliness, stress, and hopelessness**. As a **low-cost, non-pharmacological intervention**, humor therapy proved to be a **safe, enjoyable, and effective strategy** for enhancing **mental health and overall well-being** among the elderly population.

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