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Exploratory Study on Quality of Life and Barriers in Performing Range of Motion and Deep Breathing Exercises Among the Elderly in Urban and Rural Areas of Pune

Mr. Salve Dhiraj[1*], Dr. Sucheta Yangad[2], Dr. Sadhana Adhyapak[3], Dr. Jamadar Khurshid[4]

[1*]Ph. D. Scholar, Dr. D.Y. Patil College of Nursing, Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune, Maharashtra-411018

[2, 3]Associate Professor, Dr. D.Y.Patil College of Nursing, Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune, Maharashtra-411018

[4]Principal, Dr. D.Y.Patil College of Nursing, Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune, Maharashtra-411018

***Corresponding Author:**

Mr. Salve Dhiraj,

[1*]Ph. D. Scholar, Dr. D.Y. Patil College of Nursing, Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune, Maharashtra-411018

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ABSTRACT

This exploratory study was conducted to assess the quality of life and identify barriers to performing Range of Motion (ROM) and Deep Breathing (DB) exercises among the elderly in urban and rural areas of Pune. Using the WHOQOL-BREF scale and a structured questionnaire, data were collected from 100 elderly participants selected through simple random sampling. The findings revealed that a majority of the elderly (53%) were aged 60–65 years, with most being female and having an education level below primary school. The overall quality of life was found to be average across all participants. Analysis of barriers showed that 62% of the elderly experienced limitations in performing ROM and DB exercises. Among these, 24% reported aging as a barrier, 16% cited lack of motivation, and 22% reported a lack of awareness about these exercises. These barriers were consistent across both urban and rural populations. The study highlights the need for community-level interventions and educational programs to promote awareness and regular practice of ROM and DB exercises among the elderly, thereby potentially improving their quality of life. Continued efforts from healthcare professionals and policymakers are essential to address these modifiable barriers and support healthy aging

1. INTRODUCTION

Aging is associated with a decline in physical and respiratory function, making exercises like Range of Motion (ROM) and Deep Breathing (DB) essential for maintaining mobility, flexibility, and lung capacity. Regular practice of these exercises can help prevent musculoskeletal disorders, improve circulation, and enhance overall well-being among the elderly. However, various barriers such as physical limitations, lack of awareness, and socio-economic factors may hinder their participation. This study aims to assess the quality of life among elderly individuals in urban and rural areas of Pune and identify the key challenges they face in performing ROM and DB exercises. Understanding these barriers can help design targeted interventions to promote active aging and improve overall health outcomes.

Background of the Study

Aging is a natural process that leads to a gradual decline in physical, cognitive, and respiratory functions, affecting the overall quality of life (QoL) of elderly individuals. Maintaining an active lifestyle through exercises such as Range of Motion (ROM) and Deep Breathing (DB) is crucial for preserving mobility, flexibility, and respiratory efficiency. ROM exercises help prevent joint stiffness, enhance circulation, and reduce the risk of musculoskeletal disorders, while DB exercises improve lung capacity, oxygenation, and relaxation.

Despite the well-documented benefits, many elderly individuals, particularly in urban and rural areas, face multiple barriers in adopting these exercises. Factors such as lack of awareness, physical discomfort, motivation, socio-economic constraints,

and accessibility to healthcare services contribute to poor exercise adherence. The disparity between urban and rural elderly populations in terms of healthcare facilities, social support, and exercise opportunities further complicates the situation.

2. RESULTS

SECTION II: Quality of life among elderly is analysed using frequency and percentage and presented in the form of table and graph.

From selected 100 samples, 100% are of Average Quality of Life among elderly residing in selected urban and rural areas of Pune City

SECTION III: Barriers in performing range of motion exercise is analysed using frequency and percentage and presented in the form of table and graph.

From selected 100 samples, 89% are Barrier of Lack of will power, 57% Barriers are Lack of Energy, 53% Barriers are Fear of Injury, 48% Barriers of Health Conditions and 58% Barriers of Lack of Time among elderly residing in selected urban and rural areas of Pune City

SECTION IV: Barriers in performing Deep Breathing exercise is analysed using frequency and percentage and presented in the form of table and graph.

From selected 100 samples, 93% are Barrier of Lack of Time, 91% Barriers are Lack of Social Influence, 91% Barriers are Lack of Progress, 90% Barriers of Lack of Skills and 88% Barriers of Health Conditions among elderly residing in selected urban and rural areas of Pune City

NEED OF THE STUDY

Aging is associated with a decline in physical function, which affects the overall quality of life (QoL) of the elderly. Range of motion (ROM) and deep breathing exercises play a crucial role in maintaining mobility, respiratory efficiency, and overall well-being. However, various barriers, including physical, psychological, social, and environmental factors, may hinder the elderly from performing these exercises regularly.

In India, particularly in cities like Pune, the elderly population is growing due to improved healthcare and increased life expectancy. However, there is a disparity in healthcare access, awareness, and lifestyle between urban and rural elderly populations. Urban areas may offer better healthcare infrastructure but also present challenges like sedentary lifestyles and pollution. Conversely, rural areas may have limited access to healthcare services and exercise facilities.

This study is needed to:

Assess the Quality of Life (QoL): Understanding how ROM and deep breathing exercises influence the overall well-being of elderly individuals in both urban and rural areas.

Identify Barriers: Exploring the physical, psychological, environmental, and social obstacles preventing the elderly from engaging in these exercises.

Compare Urban vs. Rural Differences: Analyzing how the challenges and facilitators differ between urban and rural elderly populations.

Inform Healthcare Strategies: Providing insights for policymakers, caregivers, and healthcare professionals to develop targeted interventions for promoting exercise adherence among the elderly.

Prevent Age-Related Decline: Encouraging preventive measures to improve mobility, lung function, and independence in elderly individuals.

This study will contribute to the growing need for elderly-centric health promotion strategies, ultimately enhancing their quality of life and well-being.

AIM OF THE STUDY

The aim of this study is to assess the quality of life and identify the barriers faced by the elderly in performing range of motion (ROM) and deep breathing exercises in urban and rural areas of Pune. The study seeks to compare the challenges experienced in both settings and provide insights for developing strategies to improve adherence to these exercises, ultimately enhancing the well-being and mobility of the elderly population.

3. METHODOLOGY

Objectives of Study

1. To assess the quality of life among elderly residing in selected urban and rural areas of Pune.

2. To assess the barriers in performing range of motion exercise.

3. To assess the barriers in performing deep breathing exercise.

Study Design

This study adopted an exploratory design to assess the quality of life and identify barriers in performing Range of Motion (ROM) and Deep Breathing (DB) exercises among elderly individuals residing in selected urban and rural areas of Pune.

Study Setting

The research was conducted in selected urban and rural areas of Pune, India, to explore differences in exercise participation and associated challenges based on geographical location.

Sample Size and Sampling Technique

A total of 100 elderly individuals (aged 60 years and above) were selected using a stratified random sampling technique.

The sample was evenly distributed between urban and rural areas to ensure comparative analysis.

Inclusion Criteria

Elderly individuals aged 60 years and above.

Residents of selected urban and rural areas of Pune.

Willing to participate and provide informed consent.

Exclusion Criteria

Elderly individuals with severe cognitive impairment or critical illnesses preventing participation.

Individuals who declined to provide consent.

Data Collection Tools

Demographic Data Sheet – Collected information on age, gender, marital status, family type, comorbidities, education, income, and occupation.

WHOQOL-BREF Questionnaire – Used to assess the quality of life (QoL) in four domains: physical health, psychological well-being, social relationships, and environment.

Structured Questionnaire on Barriers – Developed by the researcher to assess barriers to ROM and DB exercises, covering:

Physical barriers (e.g., pain, fatigue, health conditions).

Psychological barriers (e.g., lack of motivation, fear of injury).

Environmental and socio-economic barriers (e.g., lack of facilities, financial constraints).

Data Collection Procedure

Face-to-face self-reported questionnaires were used for data collection.

Ethical approval was obtained, and informed consent was taken from all participants before participation.

Data Analysis

Descriptive statistics (frequency, percentage) were used to summarize demographic characteristics and barriers to exercise.

Inferential statistics were applied to compare QoL scores and barrier prevalence between urban and rural elderly populations.

Ethical Considerations

Approval was obtained from the Institutional Ethics Committee.

Informed consent was obtained from all participants, ensuring confidentiality and voluntary participation.

The study adhered to ethical guidelines for research involving human subjects.

4. RESULTS

The data was analysed and is presented in the following sections: -

SECTION I: Demographic data analysed using frequency and percentage and presented in the form of table and graph.

SECTION II: Quality of life among elderly is analysed using frequency and percentage and presented in the form of table and graph.

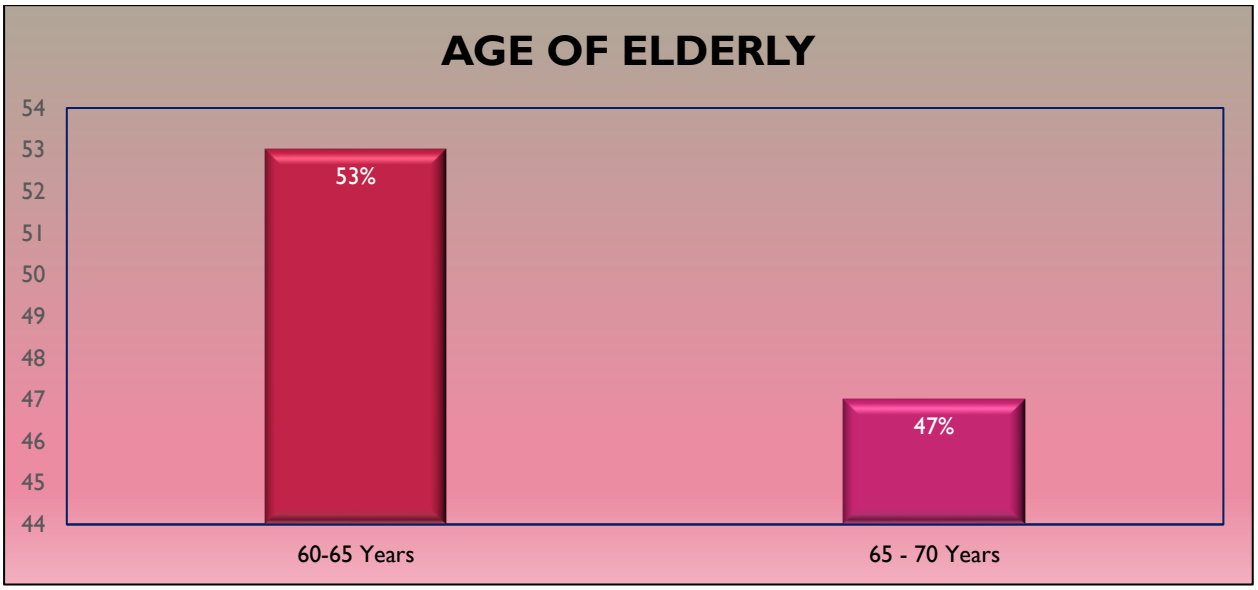
SECTION III: Barriers in performing range of motion exercise is analysed using frequency and percentage and presented in the form of table and graph.

SECTION IV: Barriers in performing Deep Breathing exercise is analysed using frequency and percentage and presented in the form of table and graph.

SECTION I: Distribution of subjects in relation to demographic data

TABLE-1 (N=100) Distribution of subjects according to Age in years

Sr. No.	Characteristics of Sample/variables	Frequency (f)	Percentage (%)
1	60- 65 years	53	53%
2	65- 70 years	47	47%
Total		100	100%

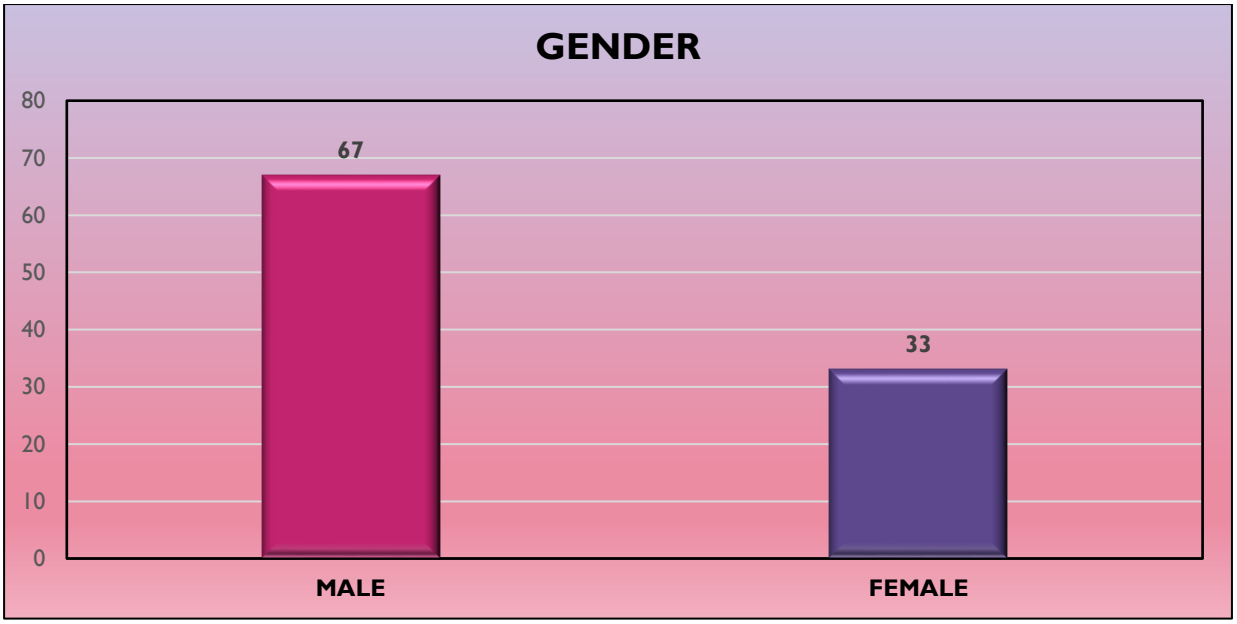


(Fig. No-1)

Data presented in Fig. No-1 indicates that from selected 100 samples, 53% are of 60-65 years, 41% are of 30-40 years.

TABLE-2 (N=100) Distribution of subjects according to Gender

Sr.No.	Characteristics of sample/variables	Frequency (f)	Percentage (%)
1	MALE	67	67%
2	FEMALE	33	33%
TOTAL		100	100%

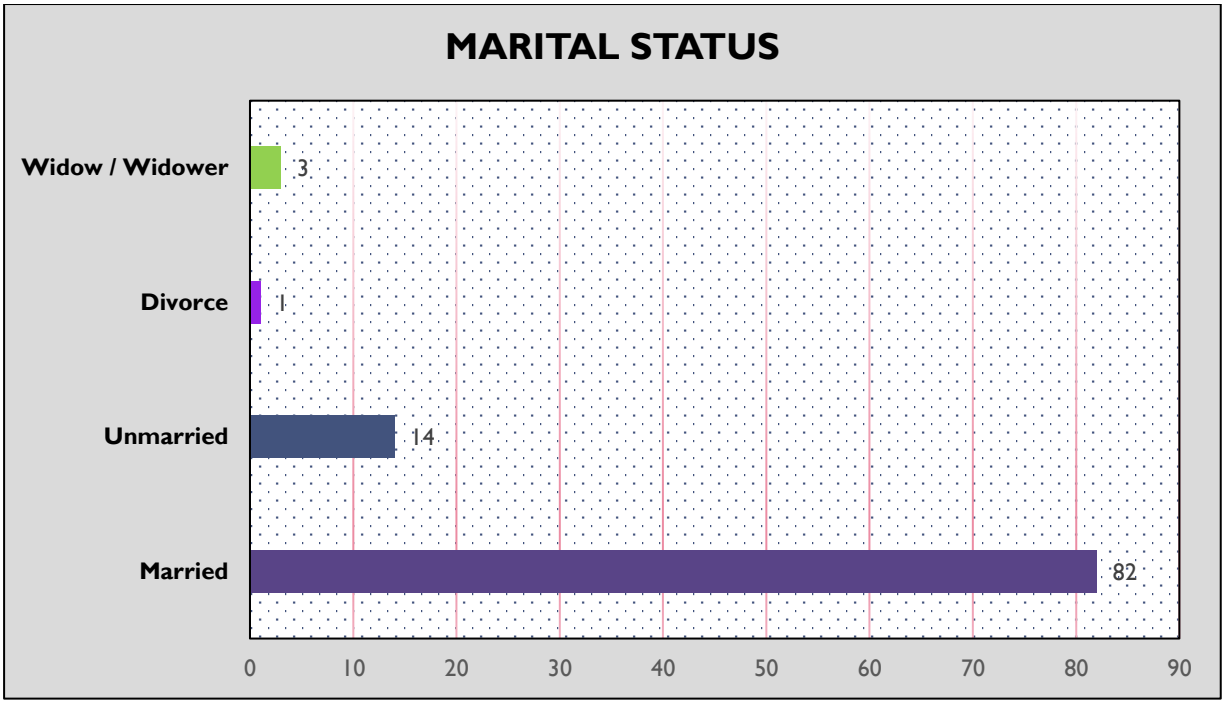


(Fig. No-2)

Data presented in Fig.No-2 indicated that from selected 100 samples, 67% are male and 33% are female.

TABLE-3 (N=100) Distribution of subjects according to Marital status

Sr.No.	**Characteristics of sample/variables**	**Frequency (f)**	**Percentage (%)**
1	Married	82	82%
2	Unmarried	14	14%
3	Divorce	01	1%
4	Widow/Widower	03	3%
TOTAL		100	100%

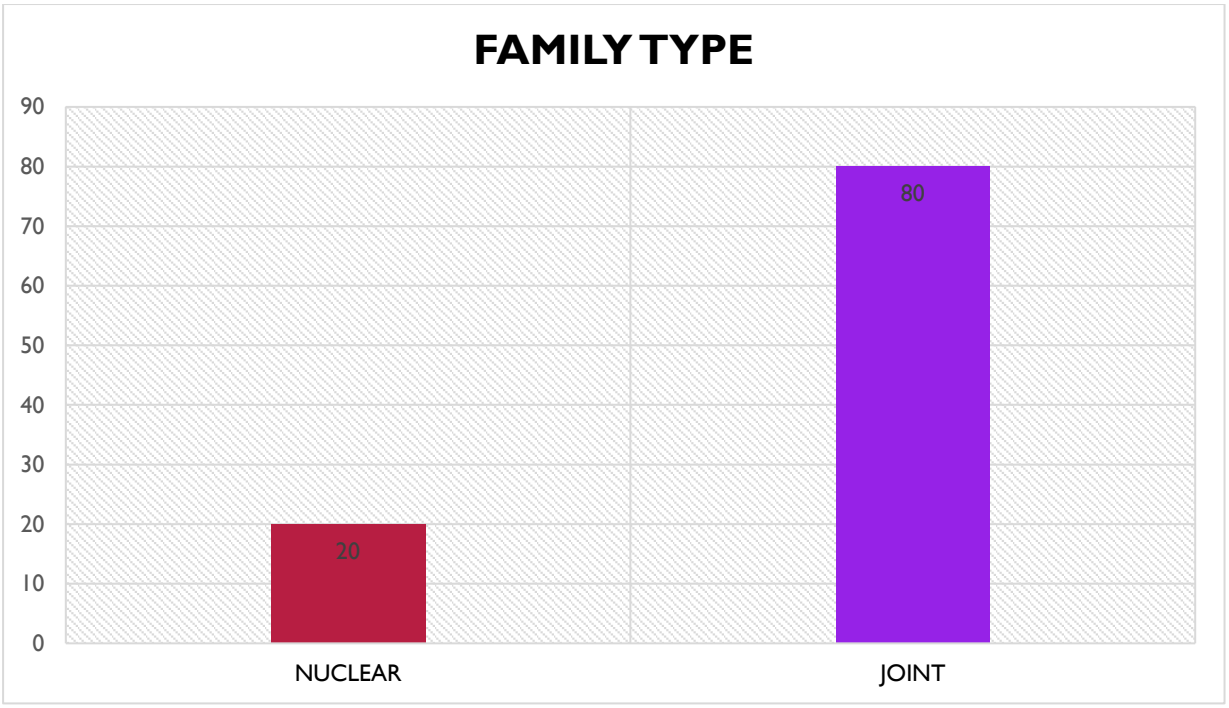


(Fig.No-3)

Data presented in Fig.No-3 indicated that from selected 100 samples, there are 82% are of married, 14% are Unmarried, 1% are Divorced and 3% are Widow/Widower

TABLE-4 (N=100) Distribution of subjects according to Family Type

Sr. No.	**Characteristics of sample/variables**	**Frequency (f)**	**Percentage (%)**
1	NUCLEAR	20	20%
2	JOINT	80	80%
TOTAL		100	100%

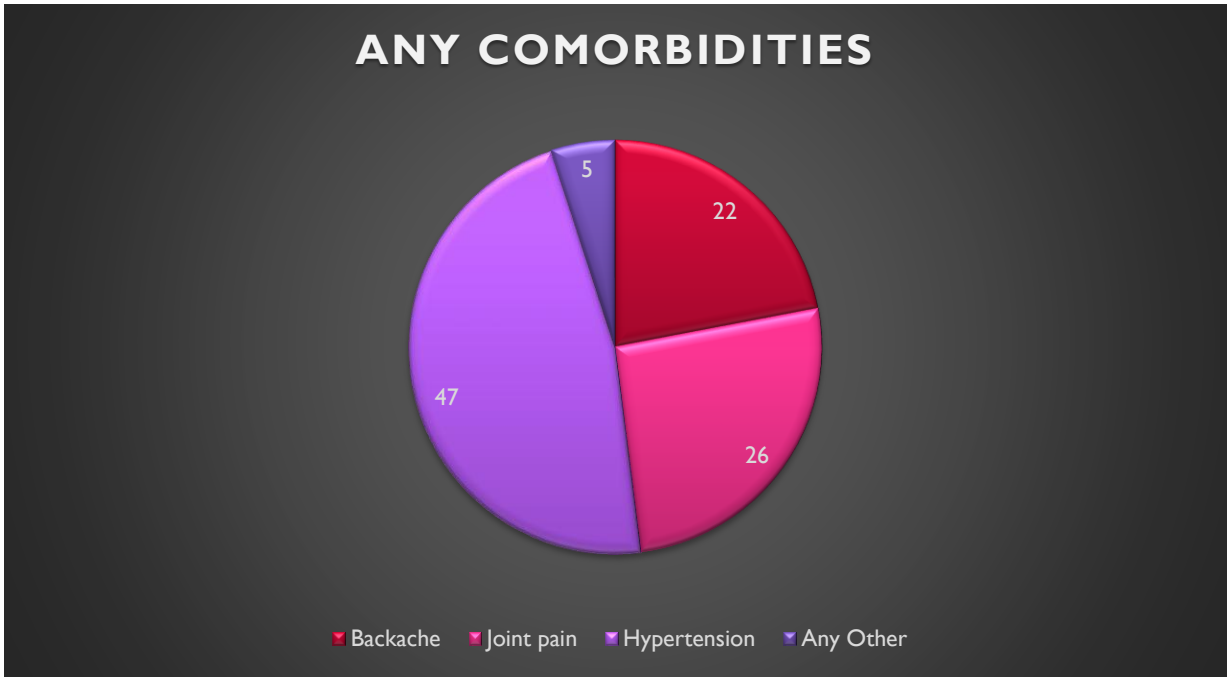


(Fig. No-4)

Data presented in Fig. No-4 indicated that from selected 100 samples, 20% are of nuclear family and 80% are of joint family.

TABLE-5 (N=100) Distribution of subjects according to Any Comorbidities

Sr.No.	**Characteristics of sample/variables**	**Frequency (f)**	**Percentage (%)**
1	Backache	22	22%
2	Joint pain	26	26%
3	Hypertension	47	47%
4	No any Comorbidity	05	05%
5	TOTAL	100	100%

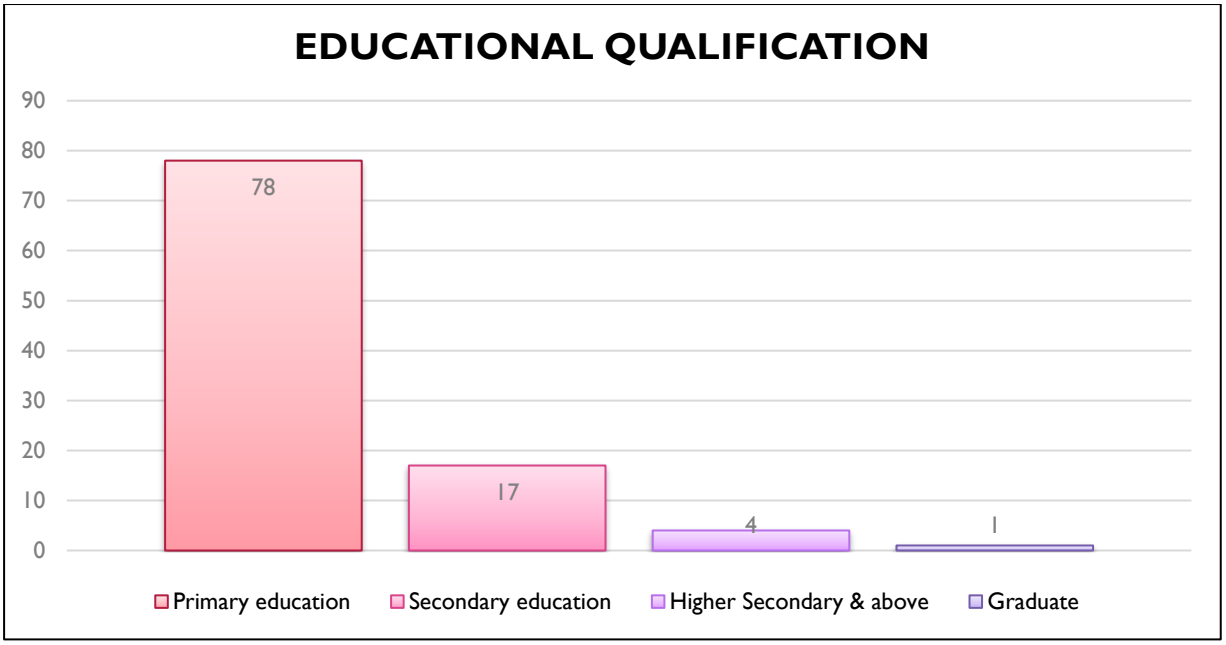


(Fig. No-5)

Data presented in Fig. No-5 indicated that from selected 100 samples, 47% are of Hypertension, 26% are of joint pain, and 22% are of any Backache and 5% are of any other Comorbidities

TABLE-6 (N=100) Distribution of subjects according to Educational qualification

Sr.No.	**Characteristics of sample/variables**	**Frequency (f)**	**Percentage (%)**
1	Primary education	78	78%
2	Secondary education	17	17%
3	Higher Secondary & above	04	04%
4	Graduate	01	01%
TOTAL		100	100%

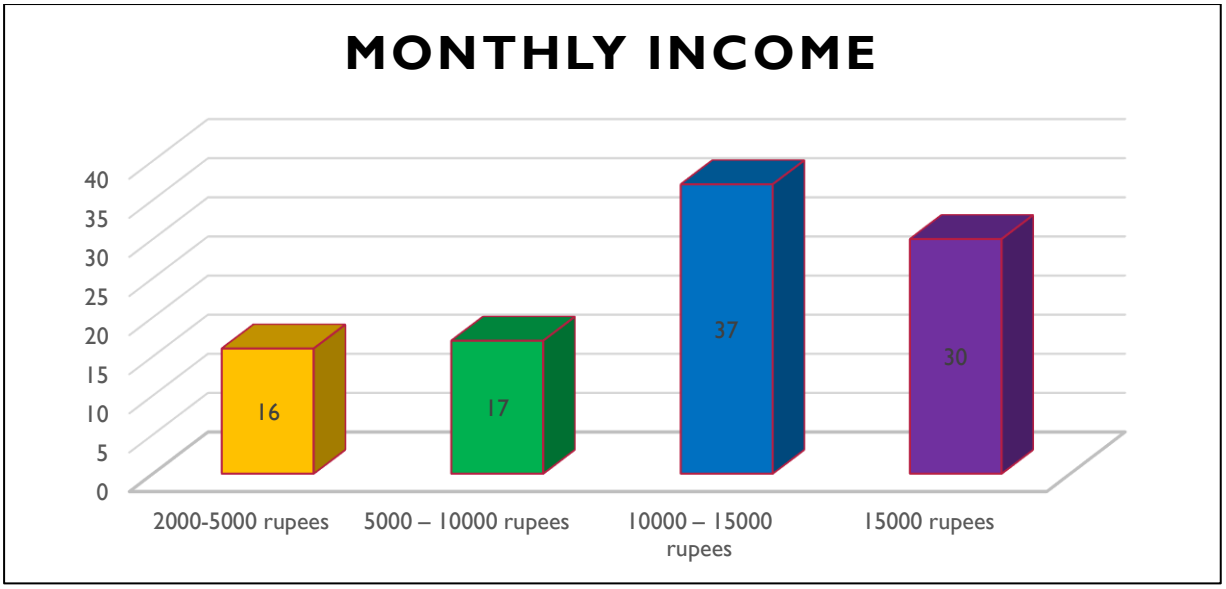


(Fig. No-6)

Data presented in Fig. No-6 indicated that from selected 100 samples, 78% are of primary, 17% are of secondary, and 4% are of higher secondary and 1% are of Graduate

TABLE-7 (N=100) Distribution of subjects according to Monthly income of employee

Sr.No.	**Characteristics of sample/variables**	**Frequency (f)**	**Percentage (%)**
1	2000-5000 rupees	16	16%
2	5000 – 10000 rupees	17	17%
3	10000 – 15000 rupees	37	37%
4	15000 rupees	30	30%
TOTAL		100	100%

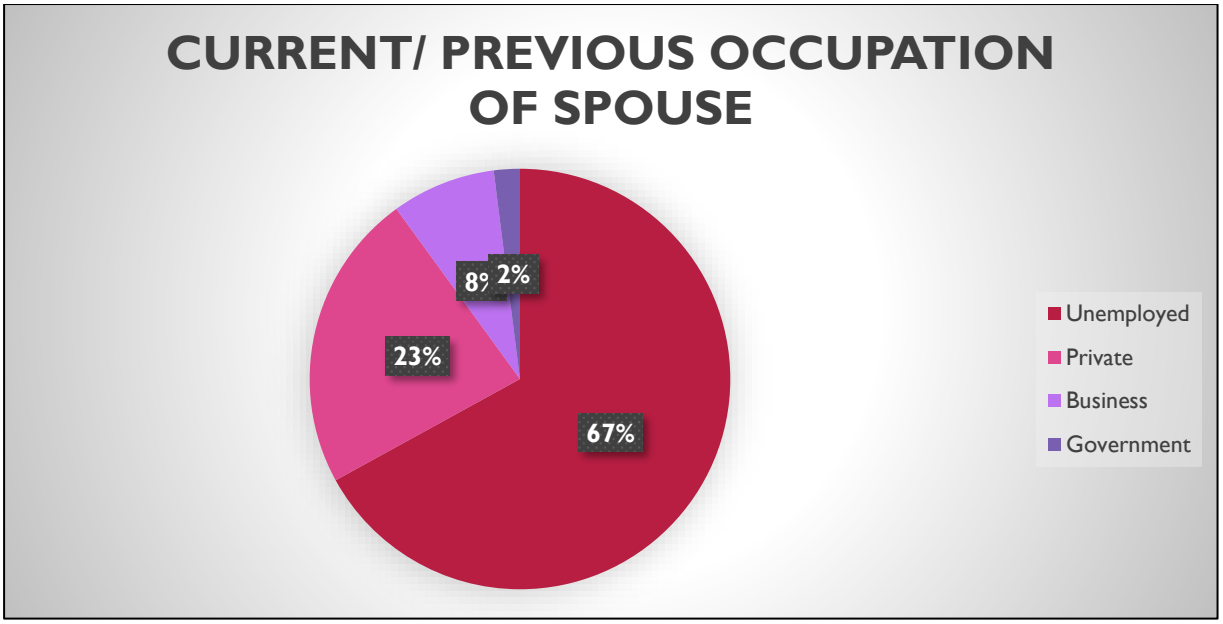


(Fig. No-7)

Data presented in Fig. No-7 indicated that from selected 100 samples, 37% are of 10000-15000, 30% are of 150000, 17% are of 5000-10000 and 16% 2000-5000 Rupees.

TABLE-8 (N=100) Distribution of subjects according to Current/Previous Occupation of spouse

Sr.No.	**Characteristics of sample/variables**	**Frequency (f)**	**Percentage (%)**
1	Unemployed	67	67%
2	Private	23	23%
3	Business	08	08%
4	Government	02	02%
TOTAL		100	100%

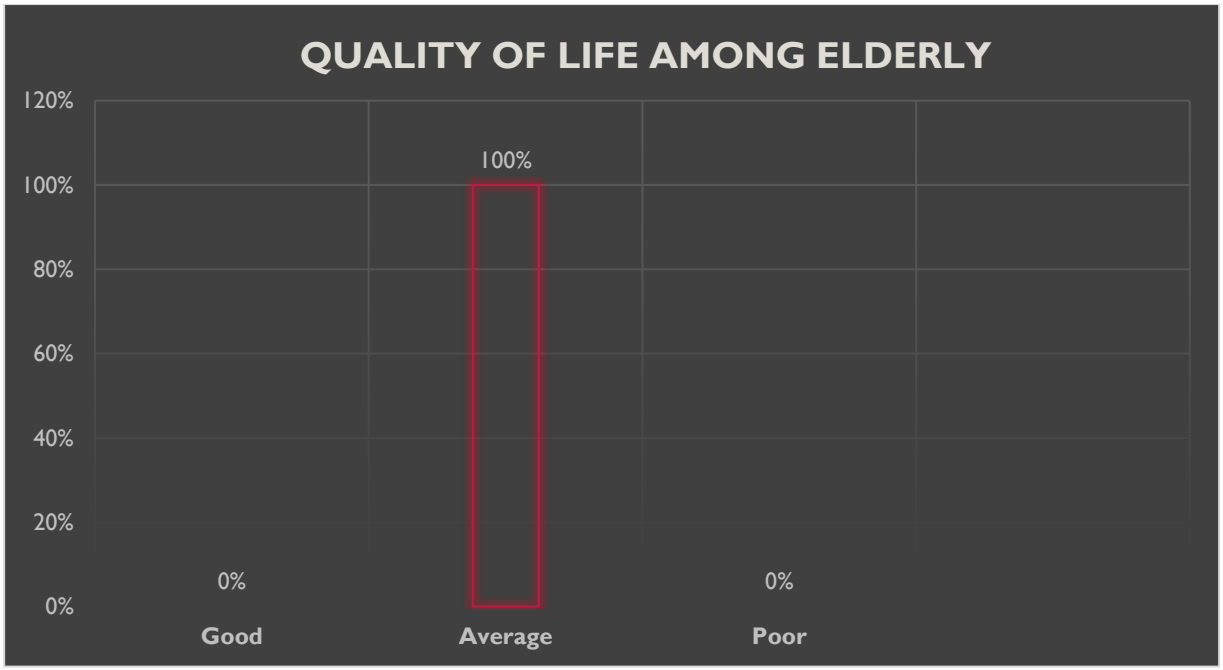


(Fig. No-8)

Data presented in Fig. No-8 indicated that from selected 100 samples, 67% are unemployed, 23% are of private, 8% are of business unemployed, 2% are Government Employee

SECTION II: Quality of life among elderly is analysed using frequency and percentage and presented in the form of table and graph. **(N=100)**

Sr.No.	**Quality of Life**	**Scoring**	**Frequency (f)**	**Percentage (%)**
1	Good	90 - 120	0	0%
2	Average	57 - 89	100	100%
3	Poor	24 - 56	0	0%
	Total		100	100%

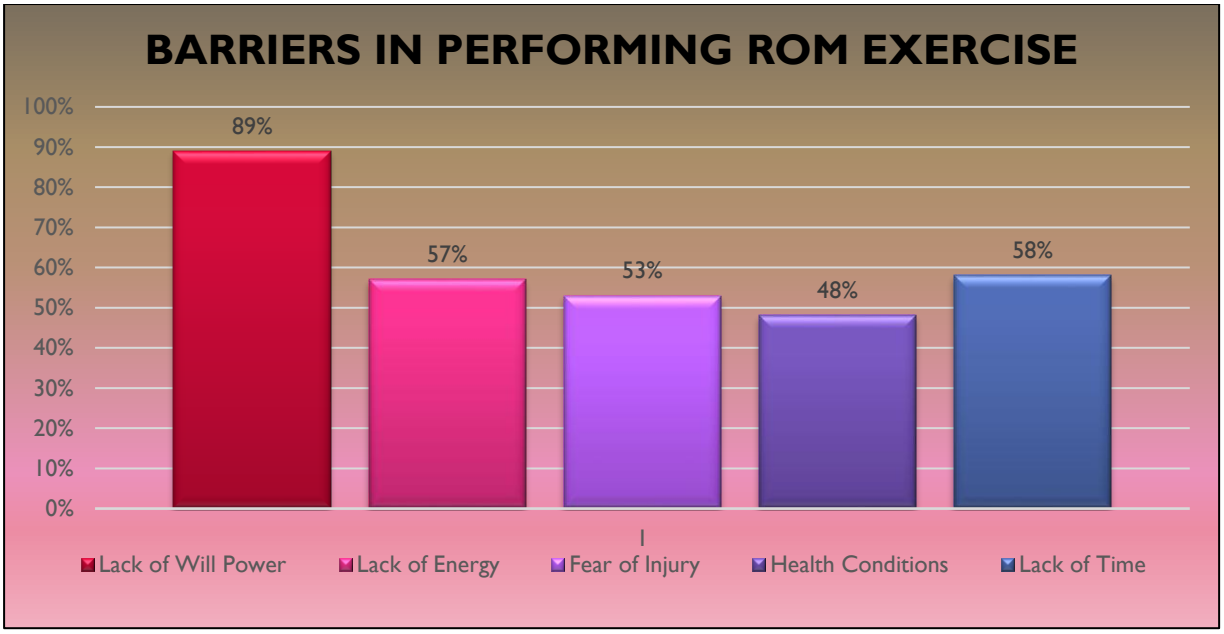


(Fig. No-09)

Data presented in fig. No-09 indicates that from selected 100 samples, 100% are of Average Quality of Life among elderly residing in selected urban and rural areas of Pune City

SECTION III: Barriers in performing range of motion exercise is analysed using frequency and percentage and presented in the form of table and graph. **(N=100)**

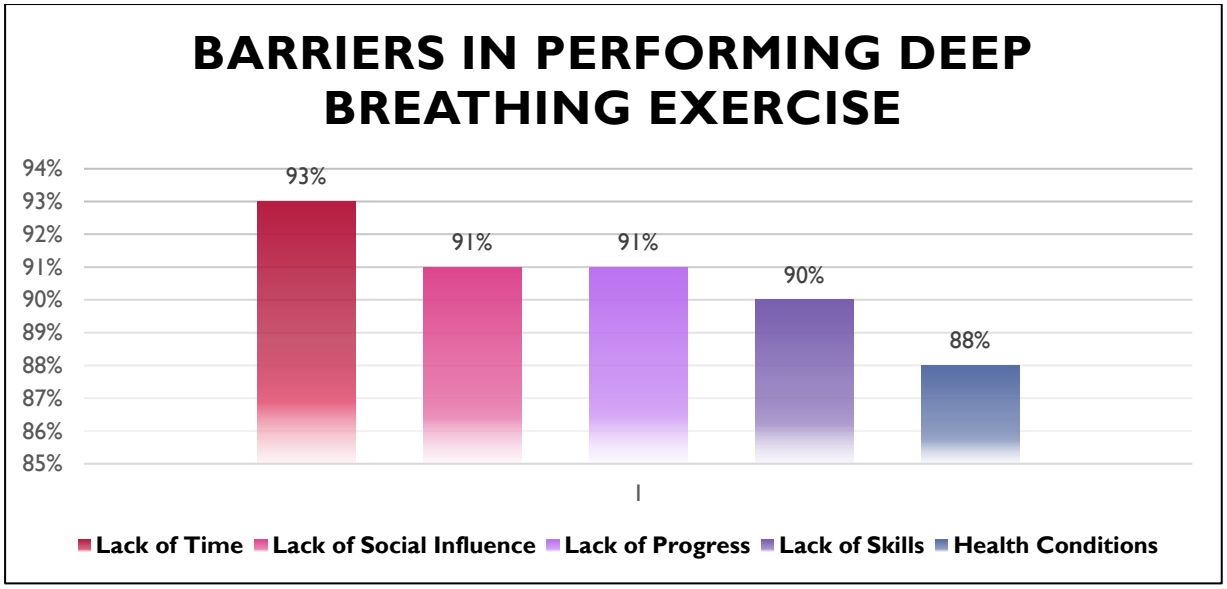
Sr.No.	**Barriers in Performing ROM Exercises**	**Frequency (f)**	**Percentage (%)**
1	Lack of Will Power	89	89%
2	Lack of Energy	57	57%
3	Fear of Injury	53	53%
4	Health Conditions	48	48%
5	Lack of Time	58	58%



Data presented in fig. No-10 indicates that from selected 100 samples, 89% are Barrier of Lack of will power, 57% Barriers are Lack of Energy, 53% Barriers are Fear of Injury, 48% Barriers of Health Conditions and 58% Barriers of Lack of Time among elderly residing in selected urban and rural areas of Pune City

SECTION IV: Barriers in performing Deep Breathing Exercise is analysed using frequency and percentage and presented in the form of table and graph. **(N=100)**

Sr.No.	**Barriers in Performing Deep Breathing Exercises**	**Frequency (f)**	**Percentage (%)**
1	Lack of Time	93	93%
2	Lack of Social Influence	91	91%
3	Lack of Progress	91	91%
4	Lack of Skills	90	90%
5	Health Conditions	88	88%



Data presented in fig. No-11 indicates that from selected 100 samples, 93% are Barrier of Lack of Time, 91% Barriers are Lack of Social Influence, 91% Barriers are Lack of Progress, 90% Barriers of Lack of Skills and 88% Barriers of Health Conditions among elderly residing in selected urban and rural areas of Pune City

5. DISCUSSION

This study aimed to assess the quality of life (QoL) and identify barriers in performing range of motion (ROM) and deep breathing (DB) exercises among elderly individuals residing in selected urban and rural areas of Pune. The findings provide insights into the challenges faced by this population and highlight areas that require intervention to improve their overall well-being.

The study revealed that 100% of the elderly participants reported an **average quality of life** based on the WHOQOL-BREF questionnaire. None of the participants rated their QoL as **good or poor**, indicating that while their basic needs might be met, there are factors limiting their overall well-being. This aligns with previous studies suggesting that aging is often associated with declining health, reduced social interaction, and limited physical activity, all of which contribute to an average QoL.

Barriers in Performing Range of Motion (ROM) Exercises

The study identified lack of willpower (89%) as the most significant barrier to performing ROM exercises. This suggests that motivation and self-discipline play a crucial role in elderly participation in physical activity. Other major barriers included Lack of energy (57%): Likely linked to aging-related fatigue and chronic health conditions.

Fear of injury (53%): Many elderly individuals are afraid of falls or worsening existing conditions. Health conditions (48%): Pain, stiffness, and other ailments limit their ability to perform movements Lack of time (58%): Even in old age, daily responsibilities and lack of prioritization of exercises can contribute to this barrier.

These findings highlight the need for awareness programs, structured exercise routines, and support from caregivers or healthcare professionals to encourage safe and regular ROM exercises among the elderly.

Barriers in Performing Deep Breathing (DB) Exercises

Unlike ROM exercises, the most significant barrier to performing DB exercises was lack of time (93%). This could indicate that the elderly do not prioritize or recognize the benefits of DB exercises in their daily routine. Other key barriers included: Lack of social influence (91%): Social support and encouragement are crucial motivators for elderly individuals to engage in healthy behaviors. Lack of progress (91%): Many may not see immediate benefits, leading to demotivation Lack of skills (90%): Proper techniques may not be well-known or taught. Health conditions (88%): Conditions like respiratory diseases, arthritis, or general fatigue could make DB exercises difficult. This suggests the need for educational programs, community-based exercise groups, and regular guidance from healthcare professionals to encourage consistent deep breathing exercises among the elderly.

6. CONCLUSION

This study explored the quality of life and barriers in performing Range of Motion (ROM) and Deep Breathing (DB) exercises among elderly individuals in selected urban and rural areas of Pune. The findings revealed that all participants reported an average quality of life, indicating a need for interventions to enhance their overall well-being.

The study identified significant barriers to exercise participation, including lack of willpower (89%), lack of time (93%), health conditions, and fear of injury. These challenges highlight the importance of motivational support, structured exercise programs, and community engagement to improve adherence to physical activity among the elderly.

Given the differences in urban and rural living conditions, tailored strategies should be developed to address location-specific challenges. Healthcare professionals, caregivers, and policymakers must prioritize exercise promotion, elderly-friendly environments, and awareness campaigns to encourage active aging.

Addressing these barriers through education, social support, and accessible exercise programs will not only enhance mobility and respiratory function but also contribute to an improved quality of life for the elderly population in Pune

REFERENCES

[1] World Health Organization. WHOQOL-BREF: Introduction, Administration, Scoring, and Generic Version of the Assessment. Geneva: WHO; 1996

[2] Singh DK, Pillai SG, Tan ST, Tai CC, Shahar S. Association between physical performance and quality of life among community-dwelling elderly in Malaysia. Clin Interv Aging. 2019;14:815-821.

[3] Chodzko-Zajko WJ, Proctor DN, Fiatarone Singh MA, Minson CT, Nigg CR, Salem GJ, et al. American College of Sports Medicine position stand: Exercise and physical activity for older adults. Med Sci Sports Exerc. 2009;41(7):1510-30

[4] Dhargave P, Sendhilkumar R. Prevalence and risk factors of disability in mobility among elderly individuals in India: Evidence from a cross-sectional analysis. BMC Geriatr. 2016;16:208.

[5] Sharma PK, Gupta A, Srivastava M, Singh SK, Deepak KK. Effect of deep breathing on autonomic functions in normal human subjects. Indian J Med Res. 2013;137(1):91-9.

[6] Brach JS, VanSwearingen JM, Perera S, Wert DM, Studenski SA. Motor learning versus standard walking exercise in older adults with subclinical gait dysfunction: A randomized clinical trial. J Am Geriatr Soc. 2013;61(11):1879-86.

[7] Ng TP, Nyunt MS, Chiam PC, Kua EH. Physical and cognitive domains of the Instrumental Activities of Daily Living: Validation in a multi-ethnic population of Asian older adults. J Gerontol A Biol Sci Med Sci. 2006;61(7):726-35.

[8] Tiedemann A, Shimada H, Sherrington C, Murray S, Lord SR. The comparative ability of eight functional mobility tests for predicting falls in community-dwelling older people. Age Ageing. 2008;37(4):430-5

[9] Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT. Effect of physical inactivity on major non-communicable diseases worldwide: An analysis of burden of disease and life expectancy. Lancet. 2012;380(9838):219-29.

[10] McDermott MM, Tian L, Liu K, Guralnik JM, Ferrucci L, Tan J, et al. Prognostic value of functional performance for mortality in patients with peripheral artery disease. J Am Coll Cardiol. 2008;51(15):1482-9.