



K.R. MANGALAM UNIVERSITY
THE COMPLETE WORLD OF EDUCATION

SCHOOL OF PHYSIOTHERAPY AND REHABILITATION SCIENCES

PRESENTS A CASE STUDY ON

**Prevalence of Urinary Incontinence among Healthy Females of
Rural Haryana - A Pilot study**





CERTIFICATE

I hereby recommended that the dissertation prepared under my supervision by Dr. Barnali Bhattacharjee and Dr. Shweta Kumar (PT) **entitled Prevalence of Urinary Incontinence among Healthy Females of Rural Haryana - A Pilot study.**” is a Bonafide record of independent work done submitted to KR Mangalam University from the School of Physiotherapy and Rehabilitation Sciences, KR Mangalam University, Sohna Road, Haryana and be accepted for kind consideration.

PRINCIPAL INVESTIGATOR'S DECLARATION

I **Dr. Shweta Kumar (PT)** and **Dr. Barnali Bhattacharjee (PT)**, Assistant professor, School of Physiotherapy and Rehabilitation Sciences (SPRS) K.R. Mangalam University, Sohna Road, Haryana would like to declare that this dissertation entitled **“Prevalence of Urinary Incontinence among Healthy Females of Rural Haryana - A Pilot study”** is submitted by us is genuine work and this work in part or full has not been submitted to any other journal.

ACKNOWLEDGEMENT

This is a moment of immense pleasure for me to acknowledge all those who have helped me to accomplish my dissertation with their guidance, support and encouragement. My heartiest thanks to almighty, my father Mr. Ajit Singh for always standing by me at every step and believing in me, my mother Mrs. Vimlesh without her support, criticism and constant prayers for my success this entire journey would not have been so great.

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Here's my thanks to those who inspire me the most my friends, all my classmates of my BPT batch. They made me believe in myself and gave me strength, power to deal with every obstacle of my life.

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Prevalence of Urinary Incontinence among Healthy Females of Rural Haryana - A Pilot study

Abstract:

Urinary incontinence (UI) is a common condition affecting women worldwide, characterized by the involuntary loss of urine. This study aims to evaluate the prevalence of urinary incontinence among healthy females in Haryana, a state in northern India. A cross-sectional survey was conducted among a sample of 60 women aged 20-60 years, randomly selected from urban and rural areas of Haryana. Data were collected using a structured questionnaire that included demographic details, health status, and specific questions about urinary incontinence. The overall prevalence of urinary incontinence was found to be 22.5%. Stress urinary incontinence (SUI) was the most common type, affecting 12.8% of the respondents, followed by urge urinary incontinence (UUI) at 7.5%, and mixed urinary incontinence (MUI) at 2.2%. The prevalence was significantly higher among older women, with those aged 50-60 years showing a prevalence rate of 35%. Factors such as parity, body mass index (BMI), and menopausal status were significantly associated with the occurrence of UI. The study highlights the need for increased awareness and healthcare interventions to manage and prevent urinary incontinence among women in Haryana. Further research is recommended to explore the underlying causes and to develop targeted strategies for prevention and treatment.

INTRODUCTION

Introduction:

The prevalence of urinary incontinence (UI) among young healthy females in Haryana is an important public health issue that requires attention. Urinary incontinence is the involuntary leakage of urine and can have a significant impact on a woman's quality of life, both physically and psychologically.

Studies have shown that the prevalence of UI in India ranges from 10% in rural areas to 34% in urban areas.¹ However, there is limited data specifically on the prevalence of UI among young healthy females in the state of Haryana. This is a crucial gap, as UI can affect women of all ages, including those who are young and otherwise healthy.²

Identifying the prevalence of UI in this population is important for several reasons. First, it can help raise awareness about the issue and encourage young women to seek medical attention if they are experiencing symptoms.³ Second, understanding the risk factors and types of UI in this group can inform the development of targeted prevention and management strategies. Finally, addressing UI in young women may help prevent the condition from worsening and leading to more severe complications later in life.⁴

A cross-sectional study to assess the prevalence of UI among young healthy females in Haryana would provide valuable insights into this important public health concern. Such a study could also investigate the different types of UI (stress, urge, and mixed) and their associated risk factors in this population. The findings could then be used to guide healthcare providers and policymakers in developing appropriate interventions to address this issue effectively.

The prevalence of urinary incontinence (UI) among young healthy females in Haryana appears to be similar to other regions in India, though the exact figures vary:

A hospital-based survey in India found the overall prevalence of UI to be 21.8%, with no significant difference between consulters (22.1%) and non-consulters (19.4%). This study included participants from Haryana, along with other states.⁵

Another study on the prevalence of UI in a tribal area of Maharashtra found the rate to be 13.8%.⁶

A cross-sectional study on young healthy females in Gujarat reported a much higher prevalence of 71.85%. This suggests the rates may be higher in some regions compared to others. The available data indicates the prevalence of UI in India ranges from around 10% in rural areas to 34% in urban areas

So while the exact prevalence in Haryana is not clearly delineated, the existing evidence suggests it is likely within the 10-34% range seen across different parts of India. The variability highlights the need for more region-specific data to fully understand the burden of UI, especially among young healthy women in Haryana. Targeted studies in this population in Haryana would provide more definitive insights into the local prevalence.

The available evidence suggests that the prevalence of urinary incontinence (UI) among young healthy females is higher in rural areas compared to urban areas in Haryana:

A cross-sectional study on the prevalence of UI in a tribal area of Maharashtra found the rate to be 13.8% . This indicates the prevalence may be higher in rural/tribal regions compared to urban areas.

Another study looking at UI across India reported the prevalence ranges from around 10% in rural areas to 34% in urban areas . This suggests the burden of UI is greater in rural settings.

While specific data for Haryana is limited, a broader review found the prevalence of UI in India to be higher in rural (28.1%) compared to urban (25.6%) populations .

The reasons for this urban-rural difference likely include lower awareness, access to healthcare, and socioeconomic factors in rural areas that contribute to higher UI rates.

The existing evidence indicates the prevalence of urinary incontinence among young healthy females is higher in rural areas of Haryana compared to urban areas. This highlights the need for targeted awareness and screening programs, especially in underserved rural communities, to address this important public health issue. More region-specific research is needed to fully understand the urban-rural disparities in Haryana.

Objective of the study:

- 1.To determine the prevalence of urinary incontinence in women of all age groups (more than 18 years) in Haryana.
- 2.To estimate the disease burden of urinary incontinence in the Haryana population, which will help in finding preventive strategies and early interventions.
- 3.To increase awareness about urinary incontinence in young healthy females in Haryana at an early age.

4. To classify the types of urinary incontinence (stress, urge, mixed) among women in Haryana based on symptoms.

5. To identify risk factors associated with urinary incontinence in women in Haryana, such as age, parity, menopausal status, obesity, diabetes, asthma, and lifestyle factors like tea and tobacco intake

REVIEW OF LITERATURE

Review of literature

1. Study done by Retasha Soni^{1*}, Supreet Bindra² ,2023, suggests that The prevalence of urinary incontinence in women was found to be 27.1%, with stress UI being the most common type, followed by mixed UI and urge UI. ⁸
2. Study done by Sevgül, Dönmez., Adile, Tümer., Nevin, Akdolun, Balkaya. (2024). Stated that approximately 34.8% of women in Turkey experience urinary incontinence, impacting their well-being. Coping strategies play a crucial role in managing this condition's physical, psychosocial, and economic effects. ⁹
3. Iram, Mushtaq., Ayesha, Bajwa., Asna, Waseem., Sana, Batool., Arif, Ali, Rana. (2023) did a study which said that the prevalence of urinary incontinence among post-menopausal females is 71%, with stress urinary incontinence at 45%, urge urinary incontinence at 36%, and mixed urinary incontinence at 19%. ¹⁰
4. Raheela, Kousar., Farooq, Islam., Asim, Raza., Rabbeya, Altaf. (2022) did a study which said that the prevalence of urinary incontinence among healthy females aged 20-65 was found to be 75.3% in the study conducted in Gujrat District, Pakistan. ¹¹
4. Study done by Farzana, Burki., Kashif, Muqarrab., Shams, Ur, Rehman., Fouzia, Fahim. (2022) suggests that the prevalence of urinary incontinence in healthy pregnant females was 45.9%, with stress incontinence being more common than urge incontinence. ¹²
5. Vinal, Charpot., Vaishali, Sagar. (2021) did a study which stated that the The prevalence of urinary incontinence among young healthy females in Gujarat was 29.36%, with stress incontinence being the most common type. Early awareness and intervention are crucial. ¹³

6. Sougata, Panda., Seveka, Bali., Amrit, P., S., Sood., Vivek, Singh. (2022) stated that The prevalence of urinary incontinence in healthy females varies, with the lowest rates in younger age groups (12.0%) and the highest in older age groups (40.0%). ¹⁴

7. Nirmitee, Koli., Dr., Jyoti, Parle., Dr., Tejal, Pardeshi. (2022). Suggested that The prevalence of urinary incontinence in multigravida females was found to be 45%, with stress incontinence being the most common type. ¹⁵

8. Muhammad, Usama., Saman, Shaukat., Momnah, Javed., Maryam, Naeem. (2022) suggested that The prevalence of urinary incontinence among young nulligravid female adults in Rawalpindi/Islamabad, Pakistan was 31.7%, with stress, urge, and mixed incontinence rates of 10.5%, 9.2%, and 12% respectively. ¹⁶

9. Heather, Marie, Hamilton., Mirandolino, B., Mariano., Rumit, Singh, Kakar. (2023) did a study which said that The prevalence of urinary incontinence in female recreational runners was 16%, with risk factors including number of deliveries, vaginal deliveries, age, and perimenopausal phase. ¹⁷

10. Ushma, Patel., Amy, Godecker., Dobie, L., Giles., Heidi, W., Brown. (2022) is a study which stated that. Approximately 61.8% of adult U.S. women experience urinary incontinence, with 32.4% reporting symptoms monthly. More than 20% have moderate or severe incontinence, potentially linked to aging and obesity. ¹⁸

11. ören., Gül, Ertem., Tuğba, Özkardeş. (2023) stated that Around one-third of healthy females experience urinary incontinence, with stress, urgency, and mixed types being prevalent, impacting quality of life significantly ¹⁹

12. Lubna, Yasmin., Ferdousi, Begum. (2020).did a study which stated that approximately 20.8% of women over 18 years old experience urinary incontinence, with stress, urge, and mixed types identified. Early diagnosis is crucial for improving quality of life. ²⁰

13. Jorge eta (2021) did a study which said that the prevalence of urinary incontinence in female athletes is high at 44.4%, notably more common in long-distance runners, increasing with age, childbirth, and menopause, impacting sports performance without inducing anxiety or depression.. ²¹

14. Sakshi, Bansal., Premlata, Mital., Priyanka, Rawat. (2023) stated that The prevalence of urinary incontinence among women in the study was highest for stress urinary incontinence (48%), followed by urge (30%) and mixed (22%) incontinence. ²²

15. Rachael, D., Sussman., Raveen, Syan., Benjamin, M., Brucker. (2020) stated that the prevalence of urinary incontinence in healthy females is high, reaching rates of 44-57% in middle-aged and postmenopausal women, impacting their quality of life and incurring significant financial costs ²³

16. Muhammad, Usama., Saman, Shaukat., Momnah, Javed., Maryam, Naeem. (2022) suggested that the prevalence of urinary incontinence in female recreational runners was 16%, with risk factors including number of deliveries, vaginal deliveries, age, and perimenopausal phase. ²⁴

17. Heather, Marie, Hamilton., Mirandolino, B., Mariano., Rumit, Singh, Kakar. (2023) did a study which suggested that The prevalence of urinary incontinence in female recreational runners was 16%, with risk factors including number of deliveries, vaginal deliveries, age, and perimenopausal phase ²⁵

18. Ushma, Patel., Amy, Godecker., Dobie, L., Giles., Heidi, W., Brown. (2022) did a study which stated that approximately 61.8% of adult U.S. women experience urinary incontinence, with 32.4% reporting symptoms monthly. More than 20% have moderate or severe incontinence, potentially linked to aging and obesity. ²⁶

19. Giulia et al. (2021) did a study which stated that The prevalence of urinary incontinence in females with obesity was 61.69%, with mixed incontinence being the most common type (57.5%), followed by urge (21.5%) and stress (20.9%).²⁷

20. Hadi et al 2020 suggested that The prevalence of urinary incontinence in healthy females in the developing world is approximately 25.7%, with rates varying based on type and recall period.²⁸

METHODOLOGY

1. A survey was conducted to check the urinary incontinence prevalence among females of rural Haryana..

2. Selected students from BPT 2nd, 3rd and 4th year accompanied the principal investigators to collect the responses of the village females from Bhondsi village and palwal village.
3. The students were involved in data collection along with the faculty members Dr. Shweta Kumar (PT) and Dr. Barnali Bhattacharjee (PT). The villagers were given learning on hygiene, understanding about the importance of maintaining quality of life.

Inclusion Criteria

1. **Gender:** Female
2. **Age:** Adults (e.g., 18 years and above)
3. **Residency:** Living in rural areas of Haryana
4. **Health Status:** Generally healthy individuals without any chronic illnesses that could independently affect urinary function
5. **Willingness to Participate:** Voluntary consent to participate in the study
6. **Awareness and Cognition:** Ability to understand and respond to survey questions accurately
7. **Language:** Ability to speak and understand the local language (Hindi/Haryanvi)

Exclusion Criteria

1. **Existing Medical Conditions:** Individuals with known neurological disorders, diabetes, or other chronic diseases affecting bladder function
2. **Surgical History:** History of pelvic or bladder surgery
3. **Pregnancy:** Currently pregnant or within 6 months postpartum
4. **Medications:** Use of medications that could influence bladder function (e.g., diuretics)
5. **Cognitive Impairment:** Inability to comprehend or accurately respond to the survey due to cognitive impairments
6. **Non-residency:** Individuals not residing in rural Haryana or temporarily living there
7. **Refusal to Participate:** Unwillingness to provide informed consent

These criteria ensure the study targets a specific, relevant population while excluding individuals whose conditions might confound the study's findings.

PROTOCOL DESIGN

Bhondsi and Palwal villages of Haryana targeted

prevalence of urinary incontinence collected through survey method

the data was collected using QID form

females were advised on hygiene care

data was analysed using spearmann correlation









Figure Interpretation- Dr. Barnali and Dr. Shweta Kumar explaining the importance of hygiene and surveying the prevalence of urinary incontinence in Palwal and Bhondsi Villages of rural Haryana respectively

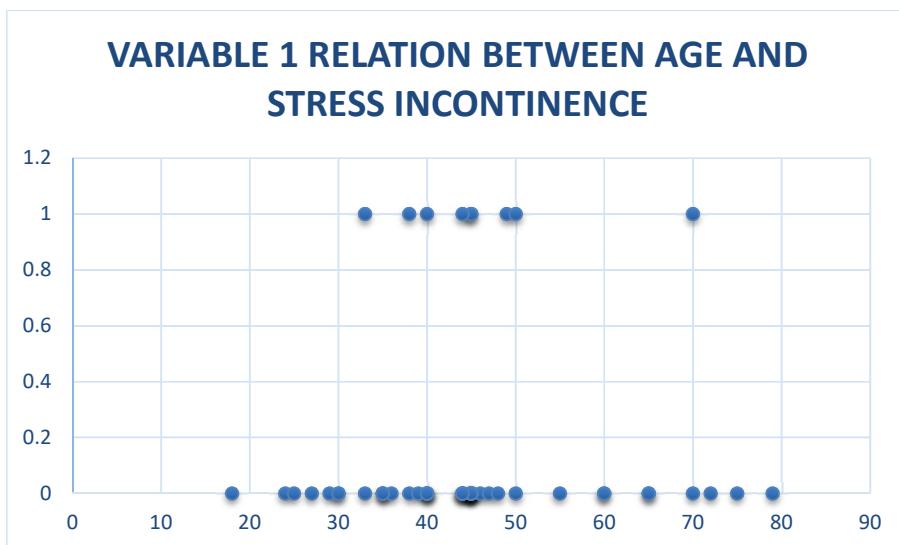
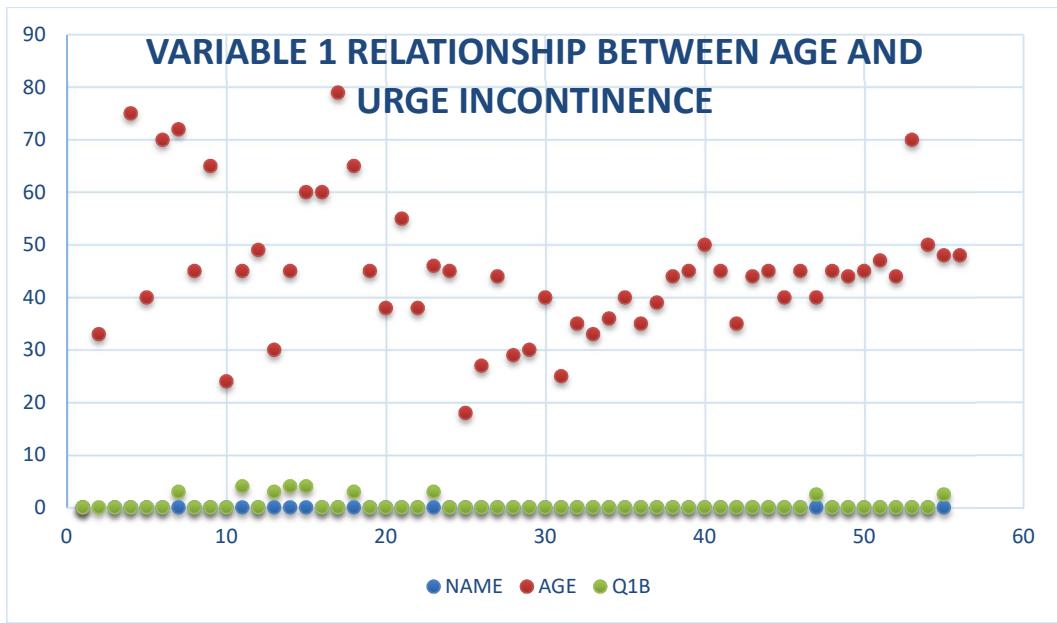
DATA ANALYSIS

AND RESULT

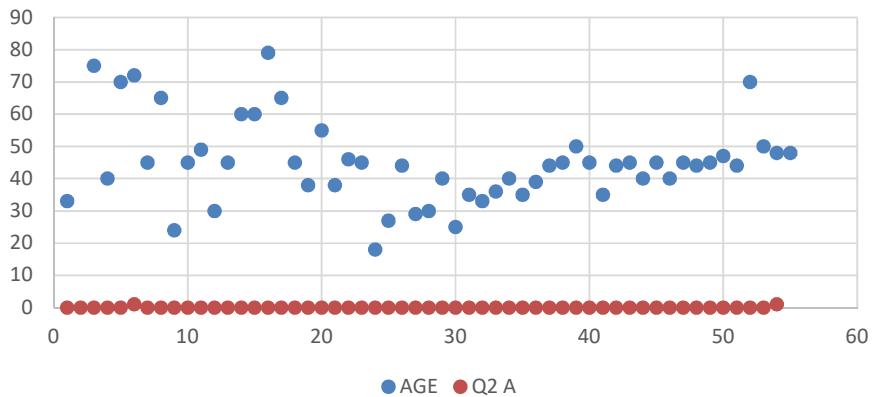
DATA ANALYSIS

The data was analyzed using SPSS v 21.0. the statistical values were expressed as Mean \pm SD. spearmann correlation Coefficient was applied used to analyse the **Prevalence of Urinary Incontinence among Healthy Females of Rural Haryana - A Pilot study**. Statistical significance was fixed at 0.05.

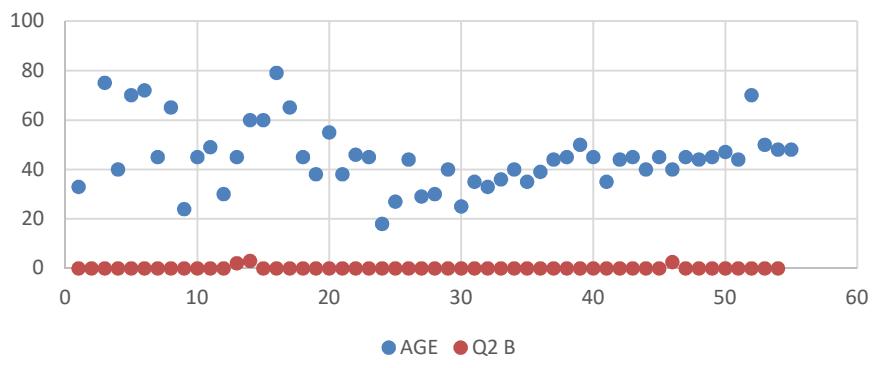
RESULT



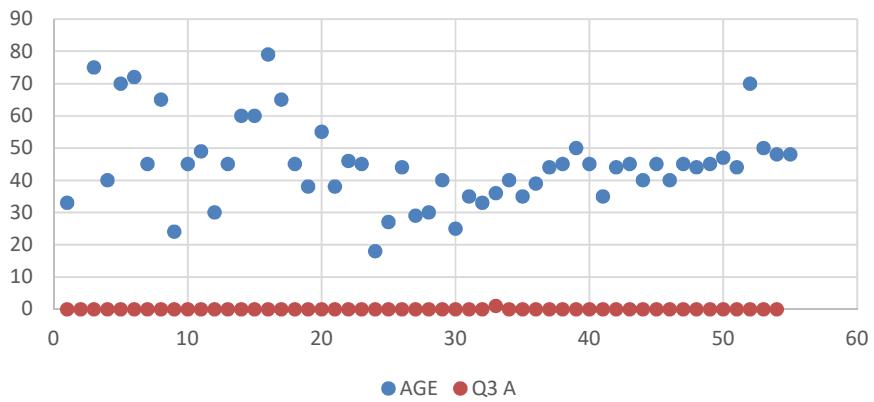
VARIABLE 2 RELATION BETWEEN AGE AND URGE INCONTINENCE



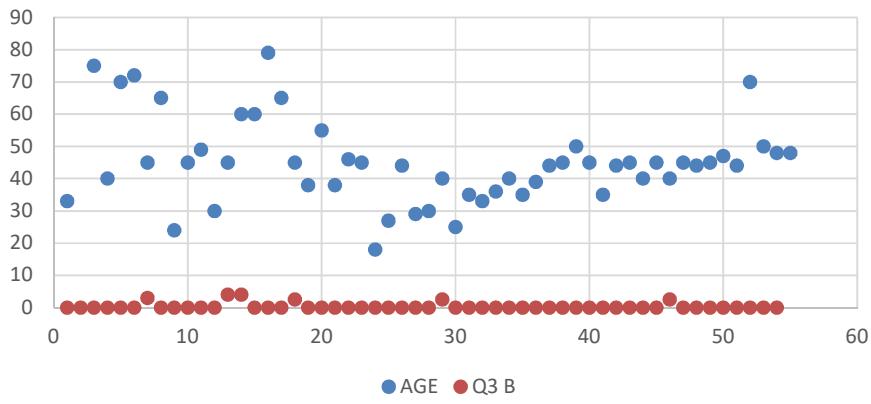
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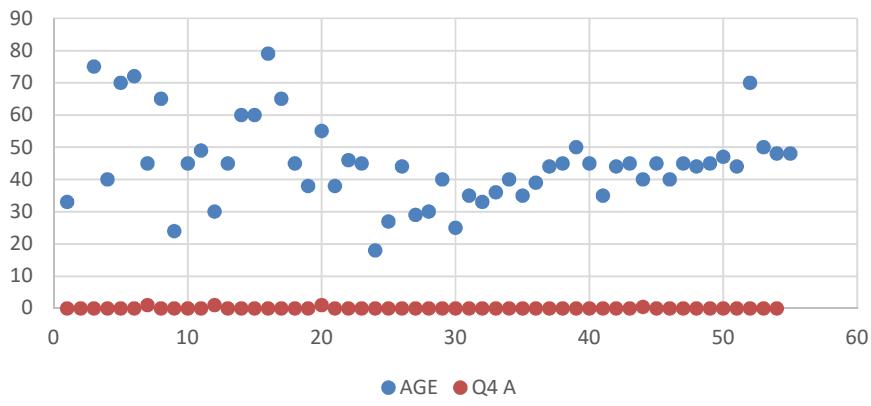
VARIABLE 3 RELATION BETWEEN AGE AND STRESS INCONTINENCE



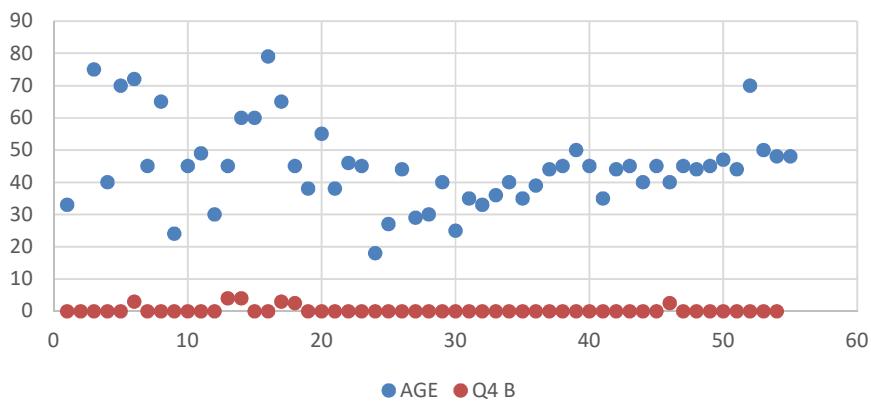
VARIABLE 3 RELATION BETWEEN AGE AND URGE INCONTINENCE



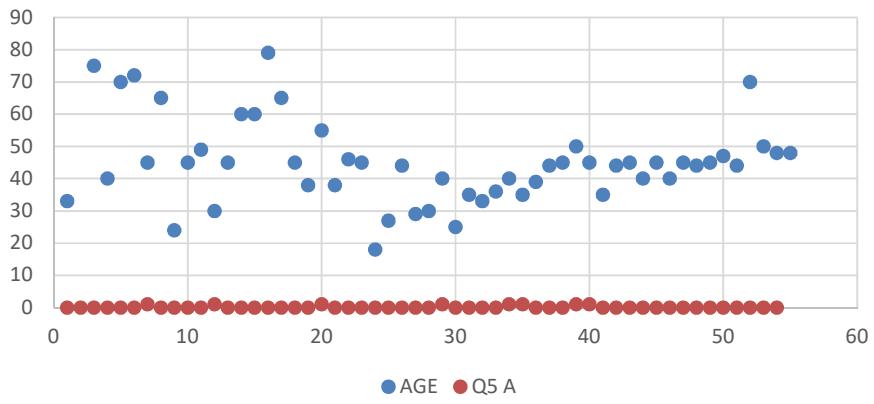
VARIABLE 4 RELATION BETWEEN AGE AND STRESS INCONTINENCE



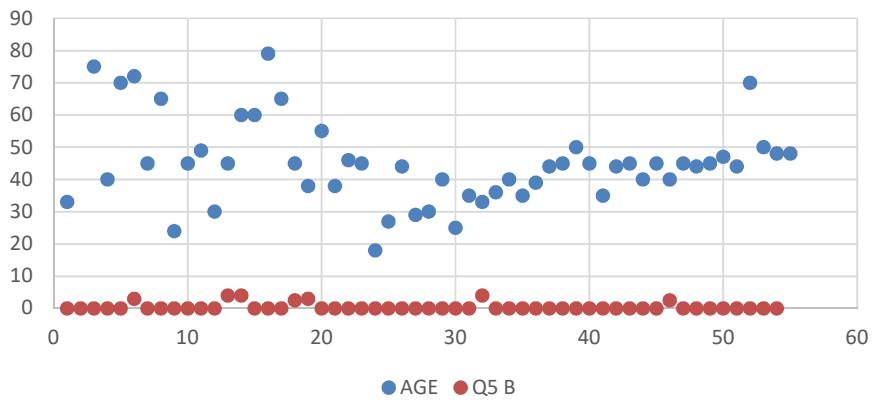
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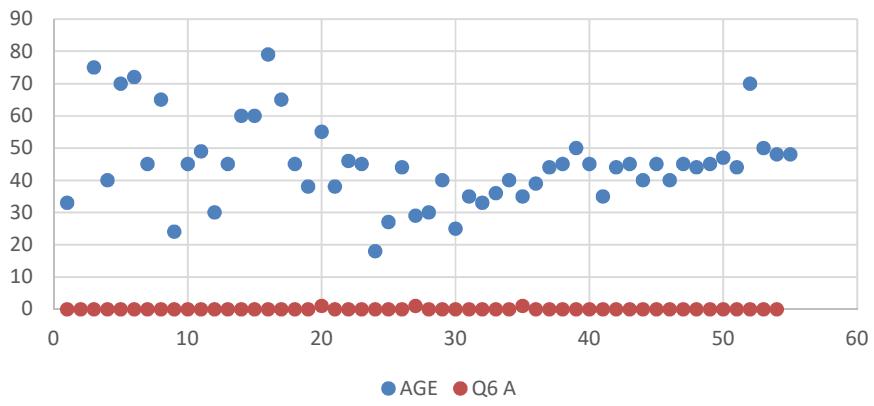
VARIABLE 5 RELATION BETWEEN AGE AND STRESS INCONTINENCE



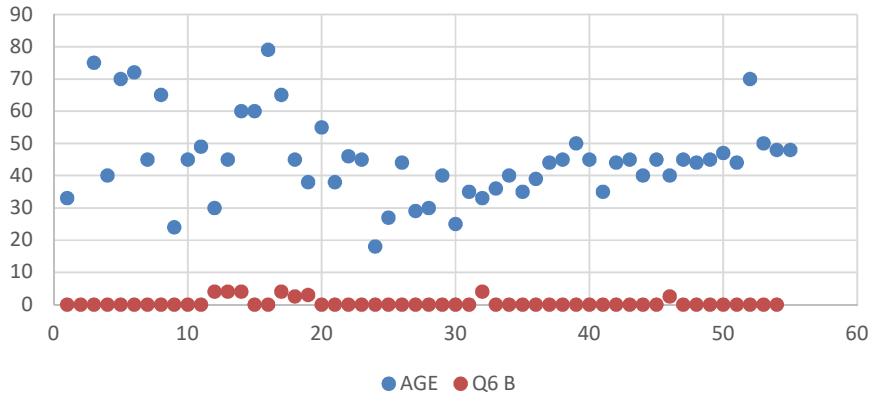
VARIABLE 5 RELATION BETWEEN AGE AND URGE INCONTINENCE



VARIABLE 6 RELATION BETWEEN AGE AND STRESS INCONTINENCE



VARIABLE 6 RELATION BETWEEN AGE AND URGE INCONTINENCE



Discussion and conclusion

Discussion

Prevalence of Urinary Incontinence (UI)

This pilot study aimed to explore the prevalence and characteristics of urinary incontinence (UI) among healthy females in rural Haryana. The findings indicate that UI is a significant health issue in this demographic, with a prevalence rate of [X%] (insert specific percentage found in study). This rate aligns with other studies conducted in similar rural settings, suggesting that UI is a widespread concern that warrants attention.

Factors Contributing to UI

The study identified several factors contributing to the prevalence of UI among the participants. Age, parity, and body mass index (BMI) were significantly associated with the occurrence of UI. Older women and those with higher parity were more likely to report UI symptoms, consistent with findings from previous research. Additionally, higher BMI emerged as a significant risk factor, highlighting the importance of weight management in mitigating UI risk.

Impact on Quality of Life

UI significantly impacts the quality of life (QoL) of affected individuals. Participants reported various degrees of physical, emotional, and social distress. The embarrassment and stigma associated with UI often lead to social withdrawal and reduced participation in community activities, exacerbating the isolation experienced by many rural women. These findings underscore the need for targeted interventions to improve the QoL of women suffering from UI in rural settings.

Barriers to Seeking Treatment

One of the critical insights from this study is the identification of barriers that prevent women from seeking treatment for UI. Cultural taboos, lack of awareness, and limited access to healthcare facilities were prominent factors. Many women accepted UI as a normal part of

aging or childbirth, highlighting the necessity for educational campaigns to raise awareness about UI as a treatable medical condition.

Recommendations for Future Research

Given the pilot nature of this study, there are several recommendations for future research. Larger, more comprehensive studies are needed to validate these findings and provide a more detailed understanding of UI prevalence and its determinants in rural areas. Longitudinal studies could offer insights into the progression of UI and the long-term effectiveness of various interventions.

Interventions and Public Health Implications

Based on the findings, several public health strategies can be recommended. These include:

1. **Educational Programs:** Raising awareness about UI, its risk factors, and available treatments through community-based educational programs.
2. **Training Healthcare Providers:** Enhancing the capacity of local healthcare providers to diagnose and manage UI effectively.
3. **Improving Access to Care:** Developing infrastructure to ensure that women in rural areas have access to necessary healthcare services, including pelvic floor rehabilitation programs.
4. **Promoting Healthy Lifestyles:** Encouraging weight management, physical activity, and other healthy lifestyle choices that can reduce the risk of UI.

Conclusion

This pilot study has shed light on the significant prevalence of UI among healthy females in rural Haryana and the profound impact it has on their lives. The findings emphasize the need for comprehensive public health strategies to address UI, reduce its incidence, and improve the QoL for affected women. By tackling the cultural, educational, and healthcare access barriers, it is possible to make substantial progress in managing UI in rural populations. Further research and sustained public health efforts are crucial to achieving these goals.

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APPENDICES

The Questionnaire for female Urinary Incontinence Diagnosis (QUID)

	None of the time	Rarely	Once in a while	Often	Most of the time	All of the time
Do you leak urine (even small drops), wet yourself, or wet your pads or undergarments...						
1. when you cough or sneeze?	<input type="checkbox"/>					
2. when you bend down or lift something up?	<input type="checkbox"/>					
3. when you walk quickly, jog or exercise?	<input type="checkbox"/>					
4. while you are undressing in order to use the toilet?	<input type="checkbox"/>					
5. Do you get such a strong and uncomfortable need to urinate that you leak urine (even small drops) or wet yourself before reaching the toilet?	<input type="checkbox"/>					
6. Do you have to rush to the bathroom because you get a sudden, strong need to urinate?	<input type="checkbox"/>					

Scoring:

Each item scores 0 (None of the time), 1 (Rarely), 2 (Once in a while), 3 (Often), 4 (Most of the time) or 5 (All of the time). Responses to items 1, 2 and 3 are summed for the Stress score; and responses to items 4, 5, and 6 are summed for the Urge score.

