

ORIGINAL RESEARCH

Obesity-Related Knowledge and Risk Factors Among Employed and Unemployed Women in a Tertiary Care Hospital in Southern India- Comparative Analysis

Conocimientos relacionados con la obesidad y factores de riesgo entre mujeres empleadas y desempleadas en un hospital de cuidados terciarios en el sur de la India. Un análisis comparativo

Vineesha P.V. Yenepoya Nursing College, India.

Email: vineeshapv@yenepoya.edu.in, <https://orcid.org/0009-0007-9616-6169>

Renita Priya D'Souza. Yenepoya Nursing College, India.

Email: renipriya.dsouza@gmail.com Corresponding Author, <https://orcid.org/0000-0003-0657-3865>

Grace John. Yenepoya Nursing College, India.

Email: Gracejohn141@gmail.com, <https://orcid.org/0009-0007-9701-2882>

Greeshma Shaji. Yenepoya Nursing College, India.

Email: Shajigreeshma2@gmail.com, <https://orcid.org/0009-0007-3540-3407>

Dona K.V. Yenepoya Nursing College, India.

Email: Donakv06@gmail.com, <https://orcid.org/0009-0002-8188-740X>

Drishya P. Yenepoya Nursing College, India.

Email: Drishya.dr03@gmail.com, <https://orcid.org/0009-0008-7517-4634>

Tenzin Tsokey. Yenepoya Nursing College, India.

Email: Tenzintokey5295@gmail.com, <https://orcid.org/0009-0002-0906-9541>

Recibido: 30 de junio de 2025.

Aceptado: 14 de octubre de 2025.

Conflictos de intereses: Ninguno.

DOI: <https://doi.org/10.71164/socialmedicine.v19i3.2026.2239>

Abstract

Background. Obesity is a growing global health concern, influenced by multiple socio-demographic and lifestyle factors. Occupational status may play a significant role in its risk profile. **Objectives.** To compare the knowledge and risk factors associated with obesity among employed and unemployed women attending a tertiary care hospital in Mangaluru, India. **Methods.** A cross-sectional study was conducted among 110 women (55 employed and 55 unemployed), aged 19–64 years, selected through purposive sampling. A structured questionnaire assessed knowledge, and a checklist evaluated obesity risk factors. Data was analyzed using SPSS v27. **Results.** Knowledge scores did not significantly differ between groups (mean $\pm$ SD: 6.55 ± 2.78 vs. 6.23 ± 2.31 ; $p = 0.514$). However, employed women had significantly higher obesity risk factor scores (6.28 ± 2.86) than unemployed women (4.37 ± 2.29 ; $p < 0.001$). Occupational status was significantly associated with obesity risk levels ($p = 0.008$). **Conclusion.** Though knowledge of obesity was comparable between groups, employed women exhibited higher obesity-related risk factors, indicating the need for targeted interventions in working populations.

Keywords. Obesity, Risk Factors, Knowledge, Employed Women, Unemployed Women, BMI, India

Resumen

Antecedentes. La obesidad es una creciente preocupación para la salud mundial, codeterminada por múltiples factores sociodemográficos y de estilo de vida. El estatus laboral puede desempeñar un papel significativo sobre el perfil de riesgo. **Objetivos.** Comparar el conocimiento de y factores de riesgo asociados con la obesidad entre mujeres empleadas y desempleadas que asisten a un hospital de cuidados terciarios en Mangaluru, India. **Métodos.** Se realizó un estudio transversal con 110 mujeres (55 empleadas y 55 desempleadas), de 19 a 64 años, seleccionadas mediante un muestreo intencional. Un cuestionario estructurado evaluó su conocimiento, y una lista de comprobación evaluó sus factores de riesgo en relación a la obesidad. Los datos se analizaron utilizando SPSS v27. **Resultados.** Sus puntuaciones de conocimientos no difirieron significativamente entre grupos (específicamente $\pm$ SD: 6.55 ± 2.78 vs. 6.23 ± 2.31 ; $p = 0.514$). Sin embargo, las mujeres empleadas tuvieron puntuaciones para factores de riesgo a la obesidad significativamente más altas (6.28 ± 2.86) que sus contrapartes desempleadas (4.37 ± 2.29 ; $p < 0.001$). Su estatus laboral estuvo significativamente asociado con el nivel de riesgo a la obesidad ($p = 0.008$). **Conclusión.** Aunque el nivel de conocimientos en relación a la obesidad fue comparable entre los dos grupos, las mujeres empleadas mostraron factores de riesgo relacionados con la obesidad más altos, indicando una necesidad de intervenciones específicas entre las poblaciones trabajadoras.

Palabras clave: Obesidad, Factores de riesgo, Conocimiento, Mujeres empleadas, Mujeres desempleadas, IMC, India

Introduction

Obesity is a complex and multifactorial condition characterized by excessive accumulation of body fat that poses a risk to health. According to the World Health Organization (WHO), obesity has reached epidemic proportions globally, with over 650 million adults classified as obese. In India, the prevalence of obesity has been steadily rising, with recent estimates indicating that nearly 20% of adults are overweight or obese. This trend is particularly concerning among women, where cultural, physiological, and socioeconomic factors contribute to a higher burden of obesity-related health issues.¹

Several factors influence the development of obesity, including sedentary lifestyles, unhealthy dietary patterns, and limited physical activity. Socioeconomic status and employment also play critical roles; employed women may face time constraints that hinder healthy behaviors, while unemployed women may encounter barriers related to access and awareness. Furthermore, there is a significant link between knowledge, behavior, and the development of obesity—poor awareness about nutritional practices and risk factors often results in behaviors that increase susceptibility to obesity.²

In Southern India, the prevalence of obesity among women has been rising, mirroring national trends. Urbanization, changing dietary habits, and reduced physical activity have contributed to this increase. In such a context, hospital-based studies are particularly relevant as tertiary care centers attract a diverse patient population, making them ideal for investigating health-related knowledge and risk factors across various socio demographic groups.³

Despite the growing concern, there is a noticeable gap in the literature regarding comparative studies that assess obesity-related knowledge and risk factors among employed versus unemployed women. Most existing research focuses either on general populations or single occupational groups, limiting the understanding of how employment status influences obesity awareness and associated risks.⁴

The present study aims “to compare knowledge and risk factors of obesity among employed and unemployed women attending a tertiary care hospital in Southern India.”

Methods

This hospital-based cross-sectional analytical study was conducted in the outpatient department of Yenepoya Medical College Hospital (YMCH), Mangaluru, during June 2025. The study population comprised employed and unemployed women aged 20–60 years attending the OPD, with a total sample size of 110 participants (with $n = Z^2 p(1-p)/E$, $Z=1.96$ as the standard normal score, $p=0.24$ as the anticipated prevalence, $E = 0.08$ as the margin of error, a 95% level of confidence and an 8% margin of error). Participants were selected using a non-probability purposive sampling technique. Inclusion criteria involved women in the specified age group who were either employed or unemployed and willing to provide informed consent. Those with diagnosed psychiatric illnesses and chronically ill individuals (excluding diabetes and cardiovascular problems) were excluded. Data were collected using a three-part structured tool: Tool 1, a demographic proforma to gather information on variables such as age, education, occupation, socioeconomic status, religion, marital status, number of children, and body mass index (BMI); Tool 2, a self-structured knowledge questionnaire comprising multiple-choice and structured questions designed to assess awareness and understanding of obesity (16 items-grading: Poor (0–5), Average (6–10), Good (11–16)); and Tool 3, a checklist to evaluate behavioral, environmental, and lifestyle-related factors influencing obesity (16-items- Risk: Low (0–5), Medium (6–10), High (11–16)). Content validity of the tool was ensured by expert evaluation from seven professionals, and necessary revisions were incorporated based on their feedback. Ethical clearance was obtained from the Institutional Ethics Committee (Ref. No. YEC-1/2024/161), and informed consent was secured from all participants. Data were analyzed using SPSS version 20; descriptive statistics such as frequency, percentage, mean, median, and standard deviation were used, while inferential statistics included the

independent *t*-test to compare knowledge and influencing factors between employed and unemployed women and the Chi-square test to identify associations with selected demographic variables. A *p*-value of less than 0.05 was considered statistically significant.

Results

Demographic Characteristics

Table 1: Distribution of Participants by Demographic Variables (N = 110)

S. No	Demographic variables	Categories	f(%)
1.	Age in years	19-29 30-40 41-51 52-64	22(20) 26(23.6) 30(27.3) 32(29.1)
2.	Education	No formal education Primary education Secondary education PUC Diploma Degree and above Any other (specify)	14(12.7) 46(41.8) 22(20.0) 11(10.0) 6(5.5) 11(10.0) 0(0)
3.	Occupation	Agriculture Private sector Government sector Self- employment Homemaker	7(6.4) 21(19.1) 7(6.4) 20(18.2) 55(50)
4.	Socioeconomic status	Below poverty line (BPL) Above poverty line (APL)	85(77.3) 25(22.7)
5.	Religion	Hindu Christian Muslim Other (specify)	64(58.2) 9(8.2) 36(32.7) 1(0.9)
6.	Marital status	Single Married Divorced Widow	12(10.9) 95(86.4) 1(0.9) 2(1.8)
7.	If married, number of children	No children One Two Three or more	20(18.2) 21(19.1) 40(36.4) 29(26.4)
8.	BMI	<18.5 kg/m ² 18.5- 24.9kg/m ² 24-29kg/m ² ≥ 30kg/m ²	10(9.1) 42(38.2) 43(39.1) 15(13.6)

Table 1 depicts that 29.1% were aged 52–64 years, 41.8% had primary education, and 50% were homemakers. Most (77.3%) belonged to the Below Poverty Line (BPL) category, 58.2% were Hindu, and 86.4% were married. About 36.4% had two children, and 39.1% had a BMI of 25–29 kg/m².

Knowledge on Obesity

Table 2: Knowledge Level and Comparison Between Employed and Unemployed Women Regarding Obesity (N = 110)

	Knowledge Level			Mean $\pm$ SD	t-value	p-value
	Good (11–16)	Average (6–10)	Poor (0–5)			
Employed (n=55)	5 (9.1%)	26 (47.3%)	24 (43.6%)	6.55 $\pm$ 2.78	0.655	0.514
Unemployed (n=55)	3 (5.5%)	30 (52.7%)	22 (40.0%)	6.23 $\pm$ 2.31		

Good knowledge was reported by 9.1% of employed and 5.5% of unemployed participants. Average knowledge was most common in both groups. The mean knowledge scores were 6.55 $\pm$ 2.78 (employed) and 6.23 $\pm$ 2.31 (unemployed), with no significant difference (t = 0.655, p = 0.514).

Obesity Risk Factors

Table 3A: Distribution of Participants by Behavioral, Environmental and Lifestyle factors (N = 110)

S. No.	Category	Factor Assessed	f (%)
1	Behavioral Factors	I have an overeating tendency when I am tense.	34 (30.9)
2		I eat snacks frequently.	7 (6.4)
3		I consume sweets and sweetened beverages frequently.	56 (50.9)
4		I consume junk food frequently.	57 (51.8)
5		I sleep soon after having food.	40 (36.4)
6		I do not perform physical activity/exercise regularly.	48 (43.6)
7		I spend time watching the phone or television for long hours in a sitting or sleeping position.	42 (38.2)
8	Environmental Factors	I have a family history of obesity.	30 (27.3)
9		I am working in a job which requires sitting 4–5 hours/day.	44 (40)
10	Lifestyle Factors	I am suffering from cardiovascular problems.	2 (1.8)
11		I am diabetic patient.	39 (39.5)
12		I have a problem with hormonal imbalance.	30 (27.3)
13		I have high cholesterol.	32 (29.1)
14		I am stressed.	30 (27.3)
15		I sleep more than 10 hours in a day.	29 (26.4)
16		I am suffering from joint pain.	31 (28.2)

Among the behavioural factors, a high proportion of participants reported frequent consumption of junk food (51.8%) and sweets or sweetened beverages (50.9%), followed by lack of regular physical activity (43.6%) and prolonged screen time (38.2%). Overeating when tense (30.9%) and sleeping soon after meals (36.4%) were also commonly observed.

Regarding environmental factors, 40% of participants reported having a sedentary job

requiring sitting for 4–5 hours per day, and 27.3% had a family history of obesity.

Under lifestyle factors, 39.5% of respondents were diabetic, while 29.1% reported high cholesterol, 28.2% joint pain, and 27.3% hormonal imbalance or stress. 26.4% reported sleeping more than 10 hours a day, and 1.8% had cardiovascular problems.

Table 3B: Risk Level and Comparison Between Employed and Unemployed Women Regarding Obesity

	Risk Level			Mean $\pm$ SD	t-value	p-value
	High (11–16)	Medium (6–10)	Low (0–5)			
Employed (n=55)	3 (5.4%)	29 (52.7%)	25 (45.4%)	6.28 $\pm$ 2.86	3.838	<0.001 ***
Unemployed (n=55)	0 (0.0%)	19 (34.5%)	36 (63.6%)	4.37 $\pm$ 2.29		

*** Very highly significant

High risk was observed in 5.4% of employed participants; none among the unemployed. Mean risk scores were significantly higher in the employed group (6.28 $\pm$ 2.86) than the unemployed (4.37 $\pm$ 2.29), (t = 3.838, p < 0.001).

Association with Demographic Variables

Table 4: Association Between Risk Factors and Occupation

Variable	χ^2 value	p-value
Occupation	13.936	0.008 **

** highly significant

A significant association was found between occupation and obesity risk ($\chi^2 = 13.936$, p = 0.008). No significant associations were noted between knowledge and demographic variables.

Discussion

The study found that the majority of both employed and unemployed women had an average level of knowledge regarding obesity. However, there was a notable difference in the risk factors associated with obesity between the two groups. Specifically, employed women exhibited a higher risk of obesity compared to unemployed women. Statistical analysis confirmed a significant association between employment status and obesity risk, with occupation showing a significant relationship (p < 0.008).

The significant difference in risk scores can be attributed mainly to behavioral and lifestyle determinants. Employed women reported higher frequencies of junk food and sweetened beverage intake, irregular exercise routines, and sedentary job patterns. Additionally, stress, prolonged sitting hours, and irregular sleep schedules contributed to the increased risk among them. These findings are consistent with earlier research linking work-related stress, dietary habits, and sedentary work

environments with obesity risk among women in the workforce. Thus, occupational factors appear to amplify behavioral and environmental risks despite similar levels of obesity knowledge.

The higher obesity risk among employed women in this study aligns with the findings of Mouchacca et al. ⁷ from Victoria, Australia, where higher stress was linked to increased BMI, greater fast-food intake, and reduced physical activity. Employed participants in this study similarly showed irregular meal timings, frequent consumption of calorie-dense foods, and low fruit and vegetable intake due to work-related stress and time constraints. Sedentary job patterns and limited opportunities for exercise further compounded their risk. Insufficient sleep and high perceived stress also contributed to weight gain. These results emphasize that behavioral, environmental, and lifestyle factors collectively influence obesity among employed women, underscoring the importance of workplace-based health promotion initiatives.

These findings align with several national and international studies that report average obesity knowledge among women but variable risk levels based on employment. Studies have shown that employed women often engage in sedentary work, experience occupational stress, and have limited time for physical activity, contributing to increased obesity risk. Conversely, unemployed women, while having more time, may lack structured health practices or awareness to utilize this time effectively. This could explain the similar average knowledge levels despite different lifestyle

pressures. The findings are consistent with studies from South India and rural Varanasi (Richa et.al), which emphasize the role of occupation and lifestyle in obesity prevalence.⁵ The findings of this study contrast with those of Erzoy C et al., who, in their study "Comparison of the Obesity Risk and Related Factors in Employed and Unemployed (Housewife) Premenopausal Urban Women," reported a higher prevalence of obesity among housewives compared to employed women.^{5, 6}

The results highlight that possessing knowledge about obesity does not necessarily translate into healthier behaviors. Without addressing key lifestyle risk factors—such as poor diet, lack of exercise, and work-related stress—even knowledgeable individuals may remain at high risk. Therefore, public health interventions must go beyond awareness and focus on enabling behavior change, particularly through occupation-sensitive strategies.

Conclusion

The study concludes that although obesity-related knowledge was comparable between employed and unemployed women, employed women demonstrated significantly higher risk scores, primarily due to behavioral (unhealthy diet, physical inactivity), environmental (sedentary work patterns), and lifestyle (stress, irregular sleep, metabolic conditions) factors. These findings underscore the importance of workplace-based interventions focusing on dietary modification, stress reduction, and promotion of physical activity.

The study emphasizes the need for multi-level interventions that address behavioral modification, environmental restructuring, and lifestyle adaptation among women, particularly those who are employed. Workplace wellness programs should integrate nutritional counseling, periodic health screening, and opportunities for physical activity during working hours. At the community level, awareness campaigns and women's support groups can promote sustainable behavior change. By combining individual empowerment with supportive environments, the prevention of obesity can become more attainable and effective in both employed and unemployed female populations.

Recommendations

- Implement occupation-specific obesity prevention programs that address the distinct behavioural and lifestyle risk factors observed among employed and unemployed women.
- Introduce work place wellness initiatives for employed women, focusing on regular physical activity breaks, stress management sessions, and promotion of balanced dietary practices within the work environment.
- Strengthen community-based health education programs for unemployed women to improve nutritional knowledge, encourage active daily routines, and prevent sedentary habits.
- Integrate routine screening for obesity-related risks (such as BMI, cholesterol, and blood glucose levels) through local health centres, ensuring early identification and intervention.
- Promote behavioural modification strategies including mindful eating, reduced screen time, and adequate sleep to address the root causes of unhealthy weight gain.
- Encourage policy-level support to create healthier workplace and community environments that facilitate sustained lifestyle changes among women.

Limitations of the study

- The cross-sectional design limits causal interpretation.
- Reliance on self-reported data may introduce bias.
- The sample was geographically limited to a single hospital in Mangaluru.
- The assessment of risk factors was restricted and may not capture all influences on obesity.

Relevance of the study

- The study addresses a crucial gap in understanding the impact of employment status on obesity risk among women in low-resource settings.
- It provides foundational evidence for developing both community-level and workplace-specific interventions.

- It supports the formulation of inclusive and occupation-sensitive health strategies to effectively combat obesity.

Funding agency None. **Declaration of competing interest** Nil. **Author Approval Statement.** All authors have read and approved the final version of the manuscript. Each author has contributed significantly to the conception, design, execution, or interpretation of the study. There is full agreement among all authors to be accountable for all aspects of the work.

Reference

1. World Health Organization. Obesity and overweight [Internet]. Geneva: WHO; 2021 [cited 2025 May 14]. Available from: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>
2. Kumari R. Association of obesity with knowledge and lifestyle behaviors among adults. *J Clin Diagn Res.* 2020 May;14(5):LC01–LC05.
3. Gopalan C. Rising obesity in India: Public health implications. *Natl Med J India.* 2016;29 (3):125–8.
4. Tripathy JP, Thakur JS, Jeet G, Chawla S, Jain S, Pal A, et al. Obesity and associated non-communicable diseases: A review of evidence. *J Postgrad Med.* 2016 Jul-Sep;62(3):189–92.
5. Richa, Ahmad S, Mishra CP, Singh GP. A study of overweight and obesity among adults in a rural area of Varanasi district. *Int J Med Sci Public Health.* 2018;7(4):329–332.
6. Ersoy C, Imamoglu S. Comparison of the obesity risk and related factors in employed and unemployed (housewife) premenopausal urban women. *Diabetes Res Clin Pract.* 2006 May;72(2):190–196.
7. Mouchacca J, Abbott GR, Ball K. Associations between psychological stress, eating, physical activity, sedentary behaviours and body weight among women: a longitudinal study. *BMC Public Health.* 2013 Sep 11;13:828. doi: 10.1186/1471-2458-13-828. PMID: 24020677; PMCID: PMC3848641



Social Medicine

Health For All

ISSN: 1557-7112