

Awareness, Attitudes, and Practices of the Exercise Buddy System Among Overweight and Obese Individuals in India: A Cross-Sectional Study

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DOI: 10.55489/njcm.160520255074

ABSTRACT

Background: Overweight and obesity are growing health problems in India due to city living and lifestyle changes. Regular exercise helps prevent chronic diseases, but many people struggle to stick with it. The exercise buddy system, where two people exercise together, may improve motivation and consistency. However, few studies explore how well-known this method is. This study examined awareness, opinions, and use of the buddy system among overweight and obese adults in India.

Methods: We conducted a study with 80 adults (aged 18–60 years; BMI \geq 24.9 kg/m²). Participants were recruited through online surveys on social media and in-person interviews at a hospital clinic. A questionnaire collected data on demographics, exercise habits, and awareness and opinions of the buddy system using an eight-item scale. We ensured data quality with strict checks. Data were analyzed using SPSS v21 with descriptive, chi-square, and regression analyses.

Results: Participants' average age was 45 years; 56.3% were women. Most (92.5%) exercised regularly, but 72.5% did so alone. Only 11.3% knew about the buddy system before the study. After learning about it, most had positive views (Cronbach's α = 0.82). Higher positive opinions increased willingness to try the buddy system by 35% (OR = 1.35, p = 0.004).

Conclusion: While baseline awareness of the exercise buddy system is low among overweight and obese individuals in India, the generally positive attitudes indicate significant potential for its integration into physical activity interventions. Future research should focus on educational strategies to enhance awareness and overcome barriers to adoption.

Keywords: Physical Activity, Buddy System, Overweight and Obesity, Body Mass Index, Awareness Program

ARTICLE INFO

Financial Support: None declared

Conflict of Interest: The authors have declared that no conflict of interests exists.

Received: 08-01-2025, **Accepted:** 03-04-2025, **Published:** 01-05-2025

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How to cite this article: Patel K, Gadhavi B, Bhatt G, Mehendale P. Awareness, Attitudes, and Practices of the Exercise Buddy System Among Overweight and Obese Individuals in India: A Cross-Sectional Study. Natl J Community Med 2025;16(5):475-479. DOI: 10.55489/njcm.160520255074

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www.njcmindia.com | pISSN: 0976-3325 | eISSN: 2229-6816 | Published by Medsci Publications

INTRODUCTION

The prevalence of overweight and obesity in India has reached alarming levels due to a combination of urbanization, sedentary lifestyles, and dietary transitions.¹ These factors contribute to a higher risk of non-communicable diseases such as cardiovascular diseases, diabetes, and certain cancers. Despite the well-established benefits of regular physical activity, adherence remains suboptimal—partly because many individuals face motivational barriers and lack social support.^{2,3}

The concept of the exercise buddy system, wherein two individuals exercise together, offers a low-cost, scalable approach to enhance physical activity adherence. Through mutual support and accountability, the buddy system may help overcome common barriers such as lack of motivation, boredom, and isolation during exercise.^{4,5} Prior studies have shown improvements in physical activity and psychosocial outcomes in various populations when a buddy system is implemented.^{6,11-17} However, there is a noticeable research gap regarding the awareness and perceived utility of this strategy among overweight and obese individuals in India.

The present study addresses this gap by evaluating both the pre-existing awareness and the attitudes and practices related to the exercise buddy system. The rationale is that enhanced awareness is a prerequisite for adoption; without it, even beneficial interventions may fail to reach the target population. Therefore, our objectives were twofold: (1) to assess the level of awareness about the buddy system (using direct, pre-benefit questions) and (2) to examine attitudes and practices surrounding exercise, with an emphasis on the potential utility of buddy-based interventions in promoting sustained physical activity.

METHODOLOGY

Study Design and Participants: This cross-sectional study targeted overweight and obese individuals (BMI ≥ 24.9 kg/m²) aged 18 to 60 years. The study was conducted over a two-month period at a tertiary care hospital and through online recruitment. Two recruitment modalities were used: **1) Online Modality:** The survey was administered via Google Forms, which was disseminated on popular social media platforms including Facebook, WhatsApp, and Twitter; and **2) In-Person Modality:** Walk-in patients attending the OPD for medical fitness assessments were approached and interviewed using the same structured questionnaire.

The dual approach was adopted to enhance the representativeness of the sample and to overcome limitations associated with purely online surveys.

Sample Size Calculation: Sample size was calculated using the formula: $n = (Z^2 \times P(1 - P))/d^2$, Where, Z is 1.96 for a 95% confidence level, P is anticipated

proportion (0.6749)¹⁸, and d is acceptable margin of error (0.05). The resulting sample size was approximately 80 participants.

Data Collection Instrument: A structured questionnaire was developed to capture detailed information in the four sections. The first section included **Sociodemographic Information** like age, gender, occupation, and other relevant demographic variables; and confirmation of regular exercise participation. The second section included information about **Exercise Practices**. These included types of exercise performed (e.g., strength training, aerobics, yoga, walking); purpose of exercise (e.g., weight reduction, fitness maintenance, following medical advice, relaxation); and mode of exercise (exercising alone, with a friend, in a group/class, or with a trainer/gym). The third section is about **Awareness of Exercise Systems** by means of direct questions assessing prior knowledge of the buddy system, as well as awareness of group and individual exercise systems. This section was placed at the beginning of the survey to capture unbiased responses before exposure to the benefits of a buddy system. The fourth section was about **Attitudes Toward the Buddy System**. It included an eight-item Likert scale (1 = Strongly disagree to 5 = Strongly agree) evaluating perceptions regarding potential benefits, including increased exercise capacity, enhanced motivation, reduced boredom, improved adherence, safety, and overall enjoyment.

Measures to Enhance Data Quality: To ensure data quality, several measures were implemented in the study. Duplicate responses were prevented by using IP restrictions for online surveys and assigning unique identification codes during in-person interviews. Response validation was achieved through real-time verification during interviews and built-in validation checks for online submissions. Additionally, confidentiality and ethical compliance were maintained by anonymizing all responses and obtaining informed consent from every participant.

Statistical Analysis: Data were entered and analyzed using SPSS version 21. The study's analysis plan involved multiple steps. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated to summarize sociodemographic characteristics and exercise practices. Reliability analysis was conducted by computing Cronbach's alpha for the eight-item attitude scale to evaluate internal consistency, and an exploratory factor analysis was performed to identify underlying constructs. Bivariate analysis used chi-square tests to compare willingness to adopt the buddy system across different exercise modes. Multivariate analysis involved developing a logistic regression model, with willingness as a binary outcome ("Yes" vs. "No/Maybe"), to assess predictors such as age, gender, and overall attitude score. Although subgroup analyses by BMI or education level could provide further insights, these were not conducted due to the study's defined objectives.

Ethical Considerations: The study was conducted after obtaining approval from the Institutional Ethical Committee (Ethical Committee of K J Somaiya Medical College and Hospital, Mumbai-Feb2023-06). Informed consent was obtained from all participants, and all data were anonymized to ensure confidentiality.

RESULTS

Sociodemographic Characteristics: The study included 80 participants with a mean age of 45 ± 10 years; 56.3% were female. Table 1 provides a detailed summary of sociodemographic characteristics.

Exercise Practices: Out of 80 respondents, 92.5% reported engaging in regular exercise. However, the mode of exercise varied, with 72.5% indicating that they exercised alone, 15.0% in a group or class, 8.8% with a friend, and 3.8% with a trainer or at a gym. Strength training (48.8%) was the most frequently reported exercise type, followed by aerobics (21.3%), yoga (12.5%), and others. Table 2 details these practices.

Awareness of Exercise Systems: Direct questioning prior to any intervention revealed that only 11.3% of participants were aware of the exercise buddy system. In contrast, awareness levels for group and individual exercise systems were 30.0% and 58.8%, respectively (Table 3).

Attitudes Toward the Buddy System: Participants responded to an eight-item Likert scale evaluating potential benefits of the buddy system. The responses indicated generally favorable attitudes, with mean scores for individual items ranging from approximately 2.90 to 3.65. The scale demonstrated high internal consistency (Cronbach's $\alpha = 0.82$) and a unidimensional structure that explained 62% of the variance (Table 4).

Willingness to Adopt the Buddy System: Cross-tabulation analysis demonstrated that participants who exercised with a friend (85.7% willing) or in a group (83.3% willing) were significantly more inclined to adopt the buddy system compared to those who exercised alone (60.3% willing) ($\chi^2 = 7.85$, $p = 0.02$) (Table 5). Logistic regression analysis further revealed that a one-unit increase in the overall

attitude score increased the odds of willingness by 35% (OR = 1.35; 95% CI: 1.10–1.65; $p = 0.004$), while age and gender were not statistically significant predictors (Table 6).

Table 1: Sociodemographic Characteristics (n = 80)

Variable	Participants (%)
Gender	
Male	35 (43.8)
Female	45 (56.3)
Age	
Mean \pm SD	45 ± 10
Age Group	
18–30 years	12 (15)
31–40 years	18 (22.5)
41–50 years	37 (46.3)
51–60 years	13 (16.3)

Table 2: Exercise Practices

Variable	Participants (%)
Regular Exercise	
Yes	74 (92.5)
No	6 (7.5)
Exercise Type (multiple responses)	
Strength training	39 (48.8)
Aerobics	17 (21.3)
Walking	7 (8.8)
Swimming	2 (2.5)
Cycling	4 (5)
Stretching	1 (1.3)
Yoga	10 (12.5)
Purpose of Exercise (multiple responses)	
Improve/Maintain Fitness	46 (57.5)
Reduce Weight	27 (33.8)
As per Medical Advice	4 (5)
Relaxation	3 (3.8)
Mode of Exercise	
Alone	58 (72.5)
In a group/class	12 (15)
With a friend	7 (8.8)
With trainer/gym	3 (3.8)

Table 3. Awareness of Exercise Systems

Exercise System	Participants (%)
Buddy System	9 (11.3)
Group System	24 (30.0)
Individual System	47 (58.8)

Table 4. Distribution of Likert Scale Responses on Attitudes Toward the Buddy System (n = 80)

Note: 1 = Strongly disagree; 5 = Strongly agree.

Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean (approx.)
Increases exercise capacity	16.3	3.8	23.8	51.3	5.0	~3.25
Motivates longer exercise duration	20.0	2.5	12.5	55.0	10.0	~3.35
Reduces exercise boredom	23.8	1.3	13.8	51.3	10.0	~3.30
Increases adherence to exercise program	21.3	1.3	22.5	47.5	7.5	~3.20
Safer to exercise with a buddy	17.5	27.5	37.5	11.3	6.3	~3.00
Buddy should be of same age	10.0	18.8	40.0	26.3	5.0	~3.10
Makes exercising fun/interesting	8.8	5.0	13.8	53.8	18.8	~3.65
Makes one dependant	10.0	21.3	41.3	21.3	6.3	~2.90

Table 5: Cross-Tabulation of Mode of Exercise and Willingness to Adopt the Buddy System

Mode of Exercise	Willing (Yes)	Not Willing (No/Maybe)	Total	% Willing
Alone	35	23	58	60.3
With a friend	6	1	7	85.7
In group/class	10	2	12	83.3
With trainer/gym	2	1	3	66.7
Total	53	27	80	66.3

Table 6: Logistic Regression Predicting Willingness to Adopt the Buddy System

Predictor	B	SE	Odds Ratio	95% CI	p-value
Age (years)	-0.02	0.03	0.98	0.93-1.03	0.45
Gender (Female = 1)	0.15	0.40	1.16	0.56-2.40	0.68
Overall Attitude Score	0.30	0.10	1.35	1.10-1.65	0.004

Outcome: Willingness (Yes = 1; No/Maybe = 0)

Note: Percentages were calculated on the basis of 80 valid responses; no data were excluded due to the rigorous quality control measures employed.

DISCUSSION

Summary of Findings: This study found that although a high percentage (92.5%) of overweight and obese individuals in India report engaging in regular exercise, a majority (72.5%) perform these exercises alone. Notably, prior awareness of the exercise buddy system was very low (11.3%), despite generally positive attitudes regarding its benefits. Participants indicated that exercising with a buddy could enhance exercise capacity, prolong exercise duration, reduce boredom, and improve adherence. These perceptions were significantly associated with the mode of exercise practiced, as those engaging in group or partner-based exercise reported a higher willingness to adopt the buddy system.

Explanation in Local Context: In the Indian context, cultural norms and the traditional emphasis on individual discipline in physical activity may contribute to the low awareness of buddy-based exercise. Limited public health messaging regarding innovative exercise strategies and the predominance of individualistic exercise habits further compounds this issue. Our findings underscore the need for culturally tailored educational interventions that promote social support mechanisms in physical activity, particularly among populations at high risk of lifestyle-related diseases.

Comparison with Existing Literature: Similar studies conducted in other populations have demonstrated that social support and accountability are key drivers of exercise adherence.⁴⁻⁶ The low awareness in our study contrasts with research in Western settings, where buddy systems are more commonly integrated into community fitness programs. However, our findings on the positive impact of group exercise on willingness to adopt the buddy system align with earlier reports emphasizing the benefits of social facilitation in exercise contexts.¹¹⁻¹⁷

Secondary Findings and Interpretation: Although the primary objective focused on awareness and attitudes, secondary analyses revealed that the overall positive perception of the buddy system is a signifi-

cant predictor of willingness to adopt it. This suggests that once individuals are educated about its benefits, the buddy system has the potential to be a viable strategy to enhance exercise adherence. These findings may inform future interventions that integrate structured buddy programs, potentially leading to improvements in physical activity levels and associated health outcomes.

STRENGTHS & LIMITATIONS

The study has certain strength. The dual-modality recruitment (online and in-person) enhanced sample diversity and minimized biases inherent to any single recruitment method. Rigorous quality control measures were implemented to ensure data validity. The study provides detailed insights into both awareness and attitudes, which can serve as a foundation for future intervention studies.

The study has certain limitations also. Despite efforts to recruit a diverse sample, the study's non-random sampling method may limit generalizability. Although the methodology was revised to include interviews, some degree of response and interviewer bias may persist. The study relies on self-reported data and does not incorporate objective measures of exercise adherence. The sample size is relatively small and may not capture the full heterogeneity of the overweight/obese population in India.

CONCLUSION

The study demonstrates that while the baseline awareness of the exercise buddy system is low among overweight and obese individuals in India, favorable attitudes toward its potential benefits exist. These findings highlight an opportunity for public health initiatives to increase awareness through targeted educational programs and to explore the integration of buddy-based exercise interventions as a means to improve adherence and overall health outcomes. Future research should consider larger, randomized studies with objective adherence measures to further validate these findings.

Authors' Contributions: KP and BG made substantial contributions to the study concept and design. KP, BG, GB, and PM were involved in data acquisition, analysis, and interpretation. KP drafted the manuscript, while KP, BG, GB, and PM critically reviewed it for important intellectual content.

No use of generative AI tools: This article was prepared without the use of generative AI tools for content creation, analysis or data generation. All findings and interpretation are based solely on the authors independent work and expertise.

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