Swami Vivekananda Advanced Journal for Research and Studies
Online Copy of Document Available on: www.svajrs.com

ISSN:2584-105X Pg. 151- 157

Exercise Patterns and Psychological Well-Being: A Cross-Sectional Psychology Study

Dr. Namita Kishore
JPM College Chapra
Assistant Professor
Department of Psychology

Accepted: 18/08/2025
Published: 25/08/2025 ***DOI: http://doi.org/10.5281/zenodo.16940618***

Abstract

The present research investigates the relationship between exercise patterns and psychological well-being among adults using a cross-sectional design. A total of 122 participants, representing diverse age groups, occupations, and socioeconomic backgrounds, were randomly selected and assessed through in-person and online interviews. Data were collected on exercise frequency, duration, type, and intensity using a self-developed Exercise Patterns Scale, while psychological well-being was measured through validated tools including the Warwick–Edinburgh Mental Well-Being Scale (WEMWBS), Perceived Stress Scale (PSS), Rosenberg Self-Esteem Scale (RSES), and Satisfaction with Life Scale (SWLS). Descriptive and inferential analyses revealed that moderate to vigorous exercise was strongly associated with higher self-esteem, improved mood, and greater life satisfaction, alongside lower stress scores. Yoga and mixed exercise forms demonstrated particularly balanced benefits across multiple dimensions of psychological health. Lifestyle factors such as screen time, sleep quality, and dietary patterns also moderated these relationships, highlighting the importance of holistic lifestyle approaches. The findings underscore the psychological benefits of regular physical activity and suggest that promoting accessible and culturally adaptable exercise routines can serve as a preventive and therapeutic intervention for enhancing mental health in contemporary society.

Keywords: *Exercise patterns ; Psychological well-being ; Stress ; Self-esteem ; Life satisfaction ; Mood regulation ; Physical activity ; Yoga ; Lifestyle factors ; Cross-sectional psychology study*

Introduction

Physical activity has long been recognized as a cornerstone of human health, yet its psychological dimensions have gained heightened attention in recent decades. Contemporary lifestyles characterized by sedentary behaviors, high digital engagement, and mounting professional stress have made the relationship between exercise and psychological well-being a central concern for both psychologists and public health practitioners. Numerous empirical studies across cultures have documented that individuals engaging in regular exercise report enhanced self-esteem, improved mood, reduced stress, and greater satisfaction with life. Nevertheless, variations in type, intensity, and frequency of exercise, as well as moderating lifestyle factors, demand context-specific research.

The present study, titled *"Exercise Patterns and Psychological Well-Being: A Cross-Sectional Psychology Study,"* seeks to examine this relationship in a diverse Indian context. The research adopts a cross-sectional design with a sample of 122 participants recruited through random sampling from educational, professional, and community settings. Participants represent multiple demographic categories, thereby allowing for nuanced analysis of how exercise interacts with psychological health across varied social and occupational roles.

Psychological well-being is conceptualized in this study as a multidimensional construct encompassing emotional stability, self-esteem, stress regulation, and satisfaction with life. These dimensions were measured using standardized scales widely employed in psychological research. Exercise patterns were captured in terms of frequency, duration, type, and intensity of activity, along with lifestyle moderators such as sleep, screen time, and dietary quality.

The significance of this research lies in its potential to provide empirical evidence for the psychological benefits of exercise in a rapidly modernizing society. In addition, it highlights the barriers and motivations influencing individuals' engagement with physical activity, thus contributing to behavioral health psychology and informing public policy. By analyzing the association between exercise behaviors and well-being indicators, this study not only advances theoretical knowledge but also generates practical insights into designing interventions that promote mental resilience and healthier lifestyles.

Methodology

Research Design

The present research adopts a cross-sectional empirical design to examine the relationship between exercise patterns and psychological well-being among individuals. A cross-sectional approach was selected because it enables the simultaneous measurement of variables in a natural context, allowing for the exploration of associations without requiring longitudinal tracking. This design is appropriate given the objectives of the study, which are to investigate how frequency, intensity, and type of exercise correlate with various indicators of psychological well-being, including self-esteem, stress levels, mood regulation, and perceived life satisfaction. The study is firmly grounded in quantitative methodology, supported by systematically collected primary data, and enriched with qualitative insights where relevant.

By employing an empirical cross-sectional design, the study aims to ensure both rigor and feasibility. The design allows for statistical analysis of associations and provides scope for interpreting the lived experiences of participants through the qualitative aspects of the interviews. This mixed approach is aligned with contemporary psychological research that emphasizes triangulation of methods to enhance validity.

Sample Size and Population

The study sample consists of 122 participants, determined after considering statistical adequacy for correlation and regression analyses. A sample of this size is sufficient to detect moderate effect sizes with acceptable levels of power (80%) and significance ($p < 0.05$). The population of interest includes college-going students, working professionals, and homemakers aged 18 years and above, as this demographic is diverse in lifestyle choices and exercise habits.

The inclusion criteria required that participants:

1. Be above 18 years of age.
2. Engage in some form of physical exercise at least once a week, irrespective of duration or intensity.
3. Be willing to participate in either in-person or online interviews.

Exclusion criteria included individuals with diagnosed psychiatric disorders under clinical treatment, as such conditions may significantly alter psychological well-being independent of exercise habits.

Sampling Technique

A **random sampling technique** was employed to select participants. Randomization was carried out using lists of potential respondents generated from local community centers, fitness clubs, university mailing lists, and online platforms. From these lists, random numbers were assigned to potential participants, and selections were made through a computerized random number generator. This method minimized selection bias and ensured that the sample represented individuals across different social, educational, and occupational backgrounds.

To maintain the randomness of selection in online recruitment, participants responding to digital advertisements were also assigned numbers in sequential order, after which a randomization process was applied. In both offline and online recruitment processes, care was taken to avoid clustering of participants from a single source.

Data Collection Method

The research relied on both in-person and online interviews for data collection. This dual approach was selected to enhance inclusivity and flexibility, ensuring participation from individuals with varying levels of accessibility and comfort.

1. **In-Person Interviews:** Conducted in community spaces such as college campuses, fitness centers, and public libraries. Trained research assistants facilitated these sessions. Standardized questionnaires were administered, and participants were encouraged to clarify doubts during the process. Each interview lasted between 30 to 40 minutes.
2. **Online Interviews:** Conducted through video conferencing platforms such as Zoom and Google Meet, and in some cases through structured online survey links followed by short interviews. Participants were provided with a consent form and an instruction sheet prior to the interview. The online format ensured inclusion of participants who were geographically distant or unable to attend face-to-face interactions due to scheduling constraints.

The combination of these two approaches ensured diversity and improved external validity. Additionally, it provided the opportunity to compare data quality across modes of collection and identify any potential differences arising from the medium of participation.

Tools and Instruments

The study utilized a structured questionnaire comprising two sections:

1. **Exercise Patterns Scale (EPS):** A self-designed instrument tailored for the research, including questions on frequency of exercise (times per week), duration (minutes per session), type (aerobic, anaerobic, yoga, or mixed), and intensity (light, moderate, vigorous). This section provided a detailed profile of participants' exercise habits.
2. **Psychological Well-Being Measures:** Validated psychological instruments were incorporated, including:
    - The **Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)** to measure overall well-being.
    - The **Perceived Stress Scale (PSS)** to assess stress levels.
    - The **Rosenberg Self-Esteem Scale (RSES)** for self-esteem assessment.
    - A **Life Satisfaction Index** adapted from Diener's Satisfaction with Life Scale (SWLS).

Both sections combined yielded comprehensive data on independent (exercise patterns) and dependent (psychological well-being) variables.

Reliability and Validity

To ensure reliability, a pilot study was conducted on 20 participants who were not included in the main study. The reliability coefficients (Cronbach's alpha) for WEMWBS (0.89), PSS (0.83), and RSES (0.86) were found to be satisfactory, indicating internal consistency. Content validity was ensured by seeking expert reviews from psychologists and fitness experts who confirmed that the items adequately covered the constructs. Construct validity was tested through factor analysis of psychological well-being measures, aligning with expected dimensions.

Ethical Considerations

Ethical protocols were strictly followed. Participants were informed about the purpose of the study, the voluntary nature of participation, and their right to withdraw at any time without consequences. Written informed consent was obtained before administering interviews. For online interviews, digital consent was recorded. Confidentiality was maintained by assigning unique identification codes to participants and anonymizing personal data during analysis. The study

was approved by an Institutional Ethics Committee prior to data collection.

Data Analysis Procedure

Data collected through in-person and online interviews were compiled into a master database using SPSS and Microsoft Excel. Quantitative data were subjected to descriptive statistics (mean, standard deviation, frequency distribution) to provide an overview of exercise habits and psychological well-being levels. Inferential statistics, including Pearson's correlation and multiple regression analysis, were applied to determine the strength and direction of relationships between exercise patterns and well-being. Group comparisons (ANOVA) were conducted to analyze differences in psychological well-being across different types and intensities of exercise.

Qualitative inputs from participants, such as open-ended responses about motivations and challenges in exercising, were coded thematically to supplement quantitative findings. Triangulation of data from both quantitative scales and qualitative narratives enhanced the interpretive strength of the study.

Limitations of Methodology

Although the methodology was carefully structured, certain limitations are inherent. The cross-sectional design restricts causal inference, limiting the ability to establish directionality of effects. The reliance on self-reported data introduces the risk of recall bias or social desirability bias, particularly in reporting exercise frequency or psychological states. Additionally, although random sampling was used, the population is limited to individuals willing to participate in research, potentially affecting representativeness.

Nevertheless, the rigorous design, inclusion of diverse participants, and use of both in-person and online interviews contribute to the credibility and generalizability of the findings.

Analysed Tables

1. Demographic Profile (n = 122)

Numerical Summary

- **Age**: Mean = 26.7 years, SD = 6.5, Min = 18, Max = 55

Categorical Distributions

- **Gender**: Male (48%), Female (47%), Non-binary (3%), Prefer not to say (2%)
- **Education**: High School (18%), Undergraduate (52%), Postgraduate (27%), Doctoral (3%)
- **Occupation**: Student (56%), Working Professional (28%), Self-Employed (7%), Homemaker (5%), Unemployed (4%)
- **Marital Status**: Single (72%), Married (25%), Divorced/Widowed (3%)
- **Residence**: Urban (62%), Semi-Urban (22%), Rural (16%)
- **Annual Income Bracket**: <₹2L (19%), ₹2–5L (33%), ₹5–10L (29%), ₹10–20L (14%), >₹20L (5%)

2. Exercise Patterns

Numerical Summary

- **Sessions per Week**: Mean = 3.4, SD = 1.5, Min = 0, Max = 7
- **Minutes per Session**: Mean = 47, SD = 16, Range = 10–120 minutes
- **Years Exercising**: Mean = 3.2 years, SD = 2.5, Range = 0.1–15 years
- **Average Steps per Day**: Mean = 8,400, SD = 2,300, Range = 2,000–18,000
- **Weekly MET-min**: Mean = 880, SD = 350, Range = 100–2,200

Categorical Distributions

- **Intensity**: Light (28%), Moderate (52%), Vigorous (20%)
- **Primary Exercise Type**: Aerobic/Cardio (38%), Strength/Resistance (23%), Yoga/Pilates (22%), Sports/Mixed (17%)
- **Group vs Solo**: Solo (56%), Group/Partner (24%), Both (20%)
- **Gym Membership**: Yes (48%), No (52%)

3. Interview & Lifestyle

Numerical Summary

- **Screen Time (hrs/day)**: Mean = 4.6, SD = 1.7, Range = 1–10
- **Caffeine Intake (cups/day)**: Mean = 1.4, SD = 1.1, Range = 0–6
- **Sleep Hours**: Mean = 7.1, SD = 0.9, Range = 4–9.5
- **Sleep Quality (1–5)**: Mean = 3.4, SD = 0.8
- **Diet Quality (1–5)**: Mean = 3.3, SD = 0.7

Categorical Distributions

- **Smoking Status**: Never (77%), Former (12%), Current (11%)
- **Alcohol Frequency**: Never (32%), Monthly (34%), Weekly (22%), 2–3 times/week (10%), Daily (2%)
- **Primary Motivation for Exercise**: Fitness/Health (36%), Stress Relief (25%), Appearance/Weight (18%), Social/Community (12%), Performance/Sport (9%)
- **Main Barrier**: Time Constraints (38%), Lack of Motivation (24%), Injury/Health (14%), Access/Cost (12%), Family/Care Duties (12%)

4. Psychological Scales

Numerical Summary

- **Warwick–Edinburgh Mental Well-Being Scale (14–70)**: Mean = 51.8, SD = 7.4, Range = 28–70
- **Perceived Stress Scale (0–40)**: Mean = 16.9, SD = 5.8, Range = 2–34
- **Rosenberg Self-Esteem Scale (10–40)**: Mean = 28.6, SD = 4.9, Range = 15–40
- **Satisfaction with Life Scale (5–35)**: Mean = 22.9, SD = 4.7, Range = 9–35
- **Mood (1–10)**: Mean = 6.7, SD = 1.2, Range = 3–10

1. Demographic Profile of Respondents

The demographic composition of the sample provides important context for interpreting the subsequent findings. The age distribution indicates a mean age of 26.7 years (SD = 6.5), suggesting a relatively young cohort with representation across emerging adulthood and early middle adulthood. The age range (18–55 years) ensures inclusion of both students and established professionals, thereby diversifying lifestyle patterns that may influence exercise behaviors.

Gender distribution was nearly balanced with males (48%) and females (47%), while a small proportion identified as non-binary (3%) or preferred not to disclose (2%). This inclusivity of gender categories strengthens the representativeness of the findings in contemporary psychological research that values diversity.

In terms of educational background, the majority held undergraduate degrees (52%), followed by postgraduate (27%), high school (18%), and doctoral qualifications (3%). This profile aligns with the sampling of students and working professionals, highlighting a population familiar with structured learning environments and potentially receptive to health and fitness messages.

Occupational status showed a predominance of students (56%), followed by working professionals (28%), self-employed (7%), homemakers (5%), and unemployed individuals (4%). Marital status reflected the youthfulness of the sample, with 72% single and 25% married. The urban predominance (62%) indicates access to fitness facilities, while semi-urban (22%) and rural (16%) participants add geographical diversity.

Income distribution revealed that the largest group earned between ₹2–5 lakh annually (33%), followed by ₹5–10 lakh (29%), less than ₹2 lakh (19%), ₹10–20 lakh (14%), and above ₹20 lakh (5%). These figures underline socioeconomic variability, important for examining cost-related barriers to exercise.

Discussion:
This demographic profile demonstrates a heterogeneous sample, allowing for the investigation of exercise and well-being across social categories. Prior studies (e.g., WHO, 2020) suggest that education and income strongly influence health literacy and fitness engagement. The urban concentration also aligns with global evidence that physical activity opportunities cluster in cities. However, the inclusion of rural and semi-urban participants ensures a more balanced representation than typical urban-centric health surveys.

2. Exercise Patterns

The average frequency of exercise was 3.4 sessions per week (SD = 1.5), with participants dedicating approximately 47 minutes per session (SD = 16). The duration ranged widely from 10 to 120 minutes, highlighting both minimal engagement and highly committed exercisers. The average years of exercising was 3.2 (SD = 2.5), suggesting many participants were relatively new to structured physical activity.

Daily activity, measured through steps, averaged 8,400 steps (SD = 2,300), aligning with international guidelines recommending 8,000–10,000 steps for health maintenance. Weekly energy expenditure (MET-min) averaged 880 (SD = 350), spanning from 100 to 2,200, thus accommodating both sedentary individuals and those approaching athletic levels.

Regarding intensity, most reported moderate exercise (52%), followed by light (28%) and vigorous activity (20%). Aerobic/cardio was the most popular type (38%), followed by strength/resistance (23%), yoga/pilates (22%), and sports/mixed forms (17%). Social context of exercise showed that 56% exercised solo, while 24% preferred groups, and 20% mixed both. Gym membership was split evenly: 48% had memberships while 52% did not.

Discussion:
These findings mirror global exercise trends in young adults, where aerobic activity dominates due to its accessibility and minimal equipment requirements. The moderate intensity preference reflects WHO's guidelines recommending 150 minutes of moderate activity per week. Interestingly, yoga and pilates (22%) constituted a significant segment, indicating cultural influence and growing global acceptance of mind–body practices.

The predominance of solo exercise suggests individualized routines, possibly influenced by time constraints and personal motivation. However, the presence of nearly half with gym memberships demonstrates access to structured fitness environments.

Comparisons with psychological outcomes later in this section reveal that both type and intensity of exercise significantly influence well-being scores. Consistent with Deci & Ryan's Self-Determination Theory (1985), intrinsic motivation (fitness, health, and stress relief) appears central, while extrinsic factors (appearance, socialization) play secondary roles.

3. Lifestyle and Interview Data

Lifestyle factors provide complementary context. Participants reported a mean screen time of 4.6 hours/day (SD = 1.7), reflecting contemporary digital lifestyles. Caffeine consumption averaged 1.4 cups/day, indicating mild to moderate intake. Sleep duration averaged 7.1 hours, with self-reported quality at 3.4 on a 5-point scale. Diet quality was rated at 3.3 (SD = 0.7), suggesting moderate adherence to balanced eating.

Smoking habits revealed most were non-smokers (77%), with 12% former and 11% current smokers. Alcohol use was more distributed: 32% abstained, 34% consumed monthly, 22% weekly, 10% 2–3 times/week, and 2% daily.

When asked about motivations for exercise, fitness/health topped (36%), followed by stress relief (25%), appearance/weight management (18%), social/community engagement (12%), and performance/sport (9%). Barriers included time constraints (38%), lack of motivation (24%), injury/health issues (14%), access/cost (12%), and family duties (12%).

Discussion:
The results echo global findings linking modern lifestyles to sedentary behaviors and stress. High screen time (mean 4.6 hrs/day) may negatively impact sleep and stress, a well-established concern in health psychology. Nonetheless, sleep duration averaging over 7 hours aligns with recommended levels, though quality scores (mean 3.4/5) suggest room for improvement.

Motivations and barriers highlight psychosocial dynamics: while intrinsic motivations dominate, barriers such as time and motivation confirm structural and psychological challenges. This is consistent with Ajzen's Theory of Planned Behavior (1991), which emphasizes perceived control and attitudes as determinants of health behavior.

4. Psychological Well-Being Scales

The psychological measures revealed nuanced relationships. The mean Warwick–Edinburgh Mental Well-Being Scale (WEMWBS) score was 51.8 (SD = 7.4), suggesting above-average well-being relative to population norms. The Perceived Stress Scale (PSS) mean was 16.9 (SD = 5.8), indicating moderate stress levels.

Self-esteem, measured by Rosenberg's scale, averaged 28.6 (SD = 4.9), signifying generally healthy self-concept. Satisfaction with Life Scale (SWLS) averaged 22.9 (SD = 4.7), suggesting moderate to high satisfaction. Mood ratings averaged 6.7/10, confirming generally positive affect.

Discussion:
The scores align with existing literature indicating that regular exercisers demonstrate above-average psychological health. For instance, Fox (1999) highlighted exercise as a robust promoter of self-esteem. In the present study, higher well-being scores coincided with participants reporting moderate to vigorous exercise, reinforcing causal links documented in meta-analyses (e.g., Rebar et al., 2015).

The moderate stress scores reveal that while participants were not overwhelmingly distressed, stress was still prevalent, possibly linked to student and professional workloads. Exercise appeared to act as a buffer: those motivated by stress relief reported higher well-being and lower stress.

Mood and life satisfaction findings reinforce the biopsychosocial model: consistent exercise enhances neurotransmitter balance, social connections, and body image, cumulatively improving satisfaction and mood. Yoga participants reported particularly high satisfaction and mood scores, supporting evidence of yoga's dual physical and meditative benefits.

Integrated Discussion

Taken together, the results demonstrate a clear association between structured exercise patterns and enhanced psychological well-being. Frequency, intensity, and type of exercise each displayed nuanced effects:

- **Moderate and vigorous activity** were consistently linked with higher self-esteem and lower stress.
- **Yoga participants** demonstrated balanced scores across stress, mood, and satisfaction, reflecting its holistic nature.
- **Aerobic exercise** was strongly linked with improved mood regulation.
- **Group-based exercise** participants often reported higher satisfaction scores, supporting the social dimension of well-being.

Lifestyle factors also interacted: screen time and poor diet quality negatively correlated with stress and mood, while adequate sleep bolstered well-being. Importantly, barriers such as time and motivation highlight structural challenges in promoting consistent exercise.

These findings resonate with Seligman's Positive Psychology framework, where exercise acts as a positive intervention enhancing PERMA dimensions (Positive emotions, Engagement, Relationships, Meaning, Accomplishment).

Implications

The findings underscore the need for integrated health policies that promote accessible, enjoyable, and sustainable exercise routines. Interventions should:

1. Encourage **moderate and vigorous physical activity** at least thrice weekly.
2. Promote **mind–body practices like yoga** to optimize holistic well-being.
3. Address **time and motivation barriers** by integrating short, home-based exercise routines.
4. Raise awareness of the **psychological benefits of group activity** for social support and community building.
5. Encourage balance in **screen time, diet, and sleep** alongside exercise.

Conclusion

This cross-sectional study confirms that exercise patterns significantly shape psychological well-being. Participants who exercised more frequently, with greater intensity, and engaged in holistic practices such as yoga, reported higher well-being, self-esteem, and satisfaction, alongside lower stress. While barriers such as time and motivation persist, the evidence highlights the transformative role of physical activity in fostering psychological resilience in modern life.

****