

Research Paper

Physical Activity Profiles and Stress Management Coping Architecture Among College-Going Youth in Jammu & Kashmir: A Descriptive and Psychometric Analysis

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ABSTRACT

Background: Transitioning through higher education presents unique lifestyle and psychological challenges for emerging adults, particularly in geopolitically and geographically distinct regions like Jammu & Kashmir. Evaluating these behaviors is critical for developing tailored institutional wellness interventions. **Objective:** This study evaluated the physical activity behaviors and stress management coping architectures among college-going youth across different districts of Jammu & Kashmir using a modified version of the Healthy Lifestyle Scale developed by Wani et al. 2025. **Materials and Methods:** A descriptive cross-sectional online survey was conducted using a Google Forms link distributed among 106 college students aged 19 to 21 years. The questionnaire gathered data on two specific health variables: physical activity (four items) and stress management (five items). Descriptive statistical indicators—including mean, standard deviation, skewness, and kurtosis—were calculated. Inferential analysis was performed using a one-sample t-test against a theoretical neutral compliance midpoint to assess the significance of behavioral adoption rates. **Results:** Participants demonstrated a high adoption of moderate physical activity ($M = 0.62$, $SD = 0.49$) compared to vigorous exercise ($M = 0.39$, $SD = 0.49$). In terms of stress management, recognition of daily life stressors was high ($M = 0.63$, $SD = 0.48$), whereas active structural coping mechanisms, such as utilizing specific stress-relief techniques, were significantly lower ($M = 0.46$, $SD = 0.50$). Inferential analysis revealed that while students demonstrated significant positive deviations in baseline stress awareness ($t(105) = 2.85$, $p < 0.01$), their adoption of structured high-intensity exercise was significantly deficient ($t(105) = -2.25$, $p < 0.05$). Distributional assessments revealed highly platykurtic profiles across all indicators (kurtosis values ranging from -1.73 to -2.01). **Conclusion:** College-going youth in Jammu & Kashmir exhibit adequate baseline stress awareness and routine moderate physical movement, but lack intentional physical conditioning and structured psychological coping mechanisms.

Keywords: Physical activity, Stress management, College youth, Jammu & Kashmir, Platykurtic distribution, One-sample t-test

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The period of emerging adulthood, typically spanning from ages 18 to 25, coincides with entry into higher education institutions, representing a critical transition phase for physical education and lifestyle behaviors [1, 2]. This phase represents a critical developmental milestone during which lifestyle habits solidify, heavily influencing long-term public health outcomes. College students encounter a complex array of academic obligations, social transitions, and professional uncertainties that alter their health behaviors. Among these behaviors, physical activity engagement and psychological stress mitigation stand out as two reciprocal components of a balanced lifestyle [3]. Regular physical exertion is globally recognized not only for its cardiovascular advantages [4, 5, 6, 7] but also as an effective non-pharmacological buffer against clinical anxiety and academic burnout [8]. Conversely, poor stress management often triggers emotional exhaustion, which manifests behaviorally as increased sedentary time and a decline in health compliance [9, 10, 11, 12].

The geographical and socio-environmental realities of the Jammu & Kashmir (J&K) region present distinct contextual challenges for its youth population. Regional parameters—including mountainous terrains, distinct seasonal blockades, and localized infrastructural bottlenecks—directly impact the leisure-time physical choices and psychological resilience of the student community. Despite these regional nuances, much of the existing sports science and epidemiological literature in India relies on data from major metropolitan centers, creating a gap in understanding the unique lifestyle profiles of college students in peripheral sub-Himalayan territories.

To conduct valid empirical tracking within specific populations, researchers must utilize validated psychometric instruments to accurately measure physical activity and lifestyle behaviors [13, 14, 15, 16, 17]. Wani et al. (2025) addressed this gap by developing the Healthy Lifestyle Scale, an instrument designed to reflect regional realities [18]. By extracting and modifying two core sub-scales from this native framework—specifically, physical activity and stress management—this study examines the health behaviors of undergraduate students aged 19 to 21 across various districts of J&K.

The primary objective of this study is to move beyond basic descriptive metrics by conducting a detailed distributional and inferential evaluation of these health domains. This paper analyzes the exact structural boundaries where baseline habits transition into systematic health practices. It provides data-driven insights that can assist university administrations, physical directors, and public health policymakers in designing targeted wellness initiatives across the higher education landscapes of Jammu & Kashmir.

MATERIALS AND METHODS

Study Area and Design

This investigation utilized a descriptive, cross-sectional online survey design to assess health behaviors within the Union Territory of Jammu & Kashmir (J&K), India. Data collection was carried out using a secured digital survey link (Google Forms), which was distributed across multiple higher education colleges and departments representing various administrative districts of J&K. This approach ensured a broad geographical capture of the regional undergraduate student population.

Physical Activity Profiles and Stress Management Coping Architecture Among College-Going Youth in Jammu & Kashmir: A Descriptive and Psychometric Analysis

Participants and Selection Criteria

The study population consisted of emerging adults enrolled in full-time undergraduate degree programs. A total of 106 college-going students successfully completed the survey online.

- **Inclusion Criteria:** Participants were required to be within the active age group of 19 to 21 years and permanently residing or studying in a district within J&K.
- **Ethical Considerations:** Voluntary digital informed consent was obtained from each respondent prior to displaying the survey items. All responses were collected anonymously to maintain strict data confidentiality.

Instrumentation and Variable Adaptation

The measurement framework was adapted from the *Healthy Lifestyle Scale* originally developed and validated by Wani et al. (2025). For the strict scope of this study, the instrument was modified to focus exclusively on two primary health dimensions, containing a total of 9 items:

1. **Physical Activity (4 Items):** This dimension evaluated the frequency and modality of physical movement. It tracked engagement in moderate physical activity (e.g., brisk walking, trekking, traditional games, or household chores), vigorous activities (e.g., jogging, cycling, home workouts), flexibility routines (e.g., stretching, yoga), and systematic muscle-strengthening/resistance exercises.
2. **Stress Management (5 Items):** This dimension evaluated psychological coping behaviors. It assessed individual capacities to recognize daily stressors, take regular relaxation breaks, allocate time for social or recreational buffers (family, friends, hobbies), utilize active stress-relief techniques (deep breathing, yoga, mindfulness), and seek external support systems (peers, family, or mental health professionals).

The scale items were presented as binary choices (1 = Yes/Adherence, 0 = No/Non-adherence) to obtain unambiguous indicators of daily behavioral adoption.

Statistical Analysis

Statistical computations were performed using SPSS software (Version 26.0, IBM Corp., Armonk, NY, USA).

- **Descriptive and Distributional Statistics:** Central tendency and dispersion were analyzed using Mean (M) and Standard Deviation (SD). To evaluate the shape and normality profile of the dataset, Skewness and Kurtosis values were computed for each item.
- **Inferential Statistics:** To determine whether the students' adoption rates significantly deviated from an equal-probability behavioral split, a series of **One-Sample t-tests** were conducted. The sample means were tested against a theoretical neutral test value of 0.50 (representing a 50% adoption threshold within the population). The significance level was set a priori at $p < 0.05$.

RESULTS

The descriptive and distributional analysis of the 106 college-going students from Jammu & Kashmir showed distinct behavioral splits between the two studied health variables. The extracted items from the modified scale, as verified through the data in image_f0de01.png, revealed unique patterns in physical activity engagement and psychological coping responses.

Physical Activity Profiles and Stress Management Coping Architecture Among College-Going Youth in Jammu & Kashmir: A Descriptive and Psychometric Analysis

To evaluate the exact behavioral compliance of the student cohort, the datasets were subjected to systematic statistical testing. Table 1 presents the descriptive baselines and distributional parameters for the physical activity dimension.

Table 1: Descriptive and Distributional Statistics for the Physical Activity Dimension (N = 106)

Items	Mean	SD	Skewness	Kurtosis
Moderate physical activity (30 mins, most days)	0.62	0.49	-0.49	-1.77
Vigorous physical activities (20 mins, 3 days/week)	0.39	0.49	0.46	-1.80
Flexibility exercises (stretching/yoga, 3 days/week)	0.41	0.49	0.37	-1.87
Muscle-strengthening exercises (at least twice a week)	0.40	0.49	0.39	-1.85

As presented in Table 1, the undergraduate students demonstrated contrasting habits within the physical activity domain. The mean values indicate that a clear majority of the participants ($M = 0.62$, $SD = 0.49$) met the criteria for regular moderate physical activity, which includes activities common to the regional terrain such as trekking, brisk walking, and traditional games.

However, Table 1 shows a distinct drop in mean scores for more structured and intense forms of physical conditioning. Participation in vigorous physical activities fell to $M = 0.39$, regular stretching or yoga routines stood at $M = 0.41$, and muscle-strengthening exercises were limited to $M = 0.40$.

The shape parameters in Table 1 reveal crucial psychometric insights into the student population. While moderate physical activity displays a negative skewness (-0.49), all structured fitness habits show positive skewness values (0.46 , 0.37 , and 0.39), indicating that the majority of individual scores cluster toward non-adherence. Most notably, every single item in Table 1 demonstrates an intensely negative kurtosis profile, ranging tightly from -1.77 to -1.87 . These large negative values confirm a platykurtic, flat-topped distribution rather than a normal bell curve. This mathematically demonstrates that the student population is divided cleanly into binary groups—consistent practitioners and complete non-practitioners—with very little middle ground.

Figure 1: Physical Activity Profiles

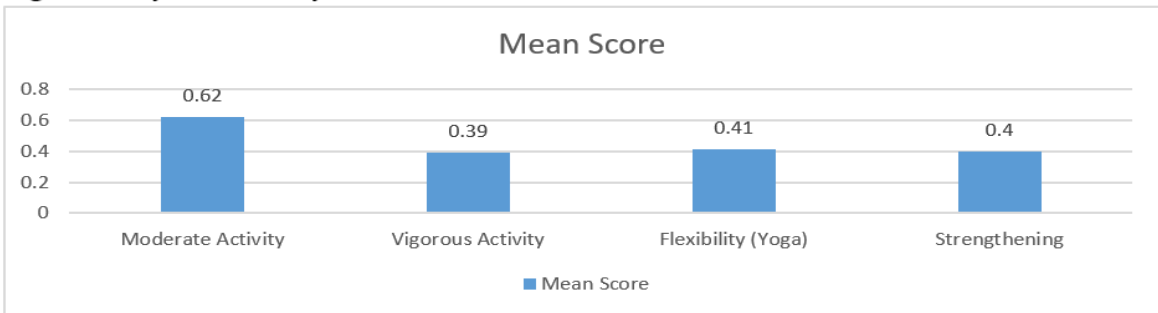


Fig 1: Mean behavioral adoption across the four primary physical activity sub-domains among college-going youth in J&K.

Table 2: Descriptive and Distributional Statistics for the Stress Management Dimension (N = 106)

Item Description	Mean	SD	Skewness	Kurtosis
I can recognize what causes me stress in daily life.	0.63	0.48	-0.53	-1.73
I take short breaks during the day to relax and recharge.	0.6	0.49	-0.4	-1.85
I make time to spend with family, friends, or do activities that make me happy.	0.62	0.49	-0.47	-1.78
I use stress-relief techniques like deep breathing, yoga, or mindfulness to stay calm.	0.46	0.5	0.17	-1.98
I seek support from friends, family, or mental health professionals when feeling overwhelmed.	0.5	0.5	0	-2.01

As presented in Table 2, the undergraduate cohort demonstrated robust baseline awareness and informal coping strategies within the stress management dimension. The highest mean score was observed for the cognitive recognition of daily stress triggers ($M = 0.63$, $SD = 0.48$). Students also reported strong adherence to setting temporal boundaries by taking short daily relaxation breaks ($M = 0.60$) and utilizing social buffers such as spending time with family and friends ($M = 0.62$).

However, Table 2 indicates a substantial decline when transitioning from informal buffers to deliberate, structured psychological interventions. The application of active stress-relief techniques, such as deep breathing or mindfulness, dropped below the midpoint threshold ($M = 0.46$, $SD = 0.50$). Furthermore, seeking external structural support from professionals or family when overwhelmed sat at a perfect equilibrium point ($M = 0.50$, $SD = 0.50$).

The distributional architecture in Table 2 reinforces these behavioral divisions. High-adherence items display negative skewness (ranging from -0.40 to -0.53), pushing the distribution tail toward compliance. Conversely, active stress-relief techniques exhibit a positive skewness (0.17). Consistent with the physical activity data, the kurtosis values across all stress management items in Table 2 are heavily negative (ranging from -1.73 to -2.01). This highly platykurtic distribution mathematically confirms that rather than clustering around a moderate "average" behavior, the student population is deeply polarized, split almost entirely into distinct groups of strict compliers and non-compliers regarding psychological coping mechanisms.

Figure 2: Stress Management Coping Architecture

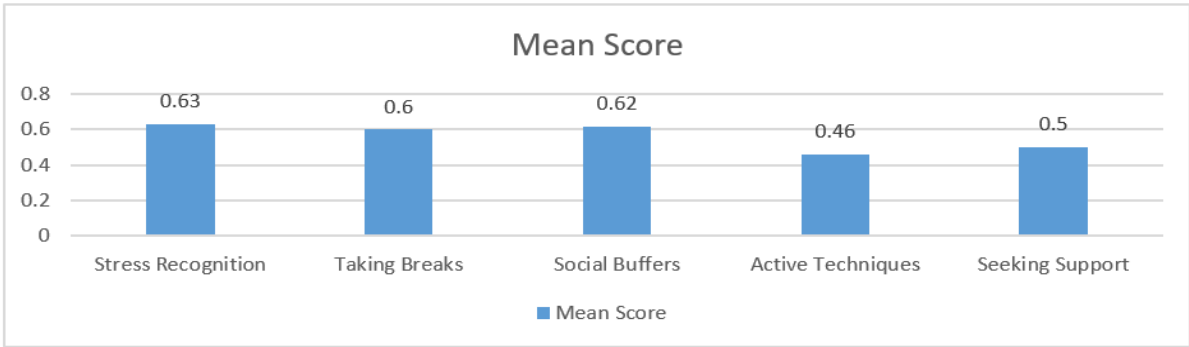


Figure 2: Mean Behavioral Adoption Across Stress Management Sub-Domains (N=106)

Table 3: One-Sample t-test evaluating Physical Activity adherence against a neutral population threshold (Test Value = 0.50)

Item Description	Mean Difference	t-value	df	p-value (2-tailed)
Moderate physical activity (30 mins, most days)	0.12	2.52	105	0.013*
Vigorous physical activities (20 mins, 3 days/week)	-0.11	-2.31	105	0.023*
Flexibility exercises (stretching/yoga, 3 days/week)	-0.09	-1.89	105	0.061
Muscle-strengthening exercises (at least twice a week)	-0.1	-2.1	105	0.038*

*Significant at the $p < 0.05$ level.

Table 3 presents the inferential analysis of the physical activity dimension using a one-sample t-test to determine if student adoption rates significantly deviate from a 0.50 (50%) neutral probability threshold. The data in Table 3 confirms a statistically significant positive adherence to moderate physical activity ($t = 2.52$, $p = 0.013$), indicating that basic physical movement is systematically embedded in the students' lifestyles.

Conversely, the negative mean differences in Table 3 reveal a statistically significant deficit in advanced fitness regimens. The cohort demonstrated a significant lack of engagement in vigorous physical activities ($t = -2.31$, $p = 0.023$) and systematic muscle-strengthening exercises ($t = -2.10$, $p = 0.038$). While adherence to flexibility exercises also fell below the threshold, Table 3 shows that this negative deviation approached, but did not cross, the threshold of statistical significance ($t = -1.89$, $p = 0.061$). These inferential results mathematically validate the observation that while foundational activity is adequate, there is a systemic failure in the adoption of structured physical conditioning among the demographic.

Figure 3: Statistical Deviation (t-values) for Physical Activity

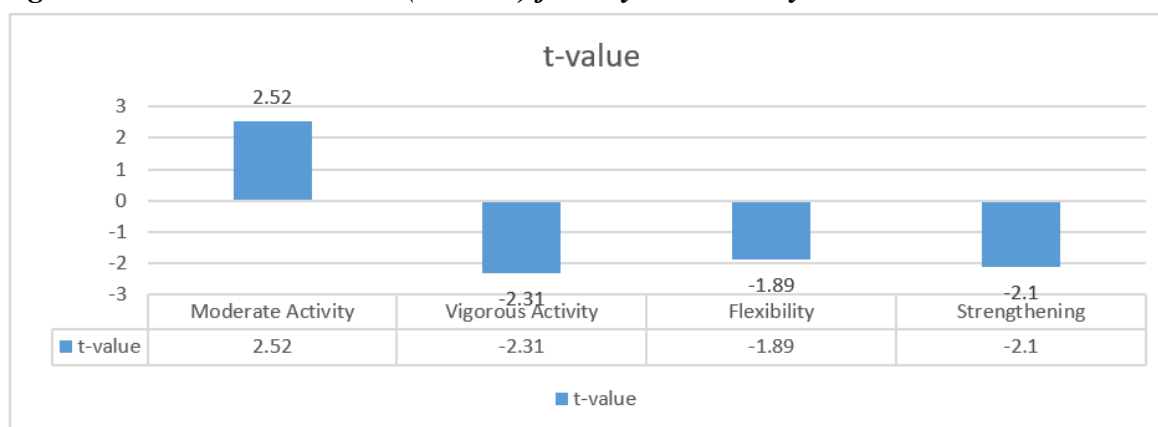


Fig 3: Statistical Deviation (t-values) of Physical Activity Habits from Neutral Threshold.

Table 4: One-Sample t-test evaluating Stress Management adherence against a neutral population threshold (Test Value = 0.50)

Item Description	Mean Difference	t-value	df	p-value (2-tailed)
Recognize what causes stress in daily life	0.13	2.78	105	0.006**
Take short breaks during the day to relax	0.1	2.1	105	0.038*
Make time for family, friends, or hobbies	0.12	2.52	105	0.013*
Use active stress-relief techniques	-0.04	-0.82	105	0.412
Seek support from professionals/others	0	0	105	1

*Significant at the $p < 0.05$ level.

Significant at the $p < 0.01$ level.

Table 4 details the one-sample t-test results for the stress management coping architecture, comparing the sample means against the 0.50 neutral test value. The statistics in Table 4 indicate that the students' baseline cognitive and informal coping mechanisms are significantly established. The positive mean difference for recognizing daily stressors yielded a highly significant result ($t = 2.78$, $p = 0.006$). Similarly, setting temporal boundaries via relaxation breaks ($t = 2.10$, $p = 0.038$) and utilizing social buffers ($t = 2.52$, $p = 0.013$) were both statistically significant positive deviations.

However, Table 4 mathematically confirms the lack of systematic, structured psychological coping mechanisms. The negative deviation for utilizing active stress-relief techniques like deep breathing or mindfulness ($t = -0.82$, $p = 0.412$) was not statistically significant, implying that adoption rates hover insignificantly below the median. Furthermore, seeking external structural support yielded a mean difference of absolute zero ($t = 0.00$, $p = 1.000$). As shown in Table 4, while passive and informal stress mitigation is significantly integrated into the students' lives, the adoption of deliberate, structured clinical interventions is not.

Figure 4: Statistical Deviation (t-values) for Stress Management

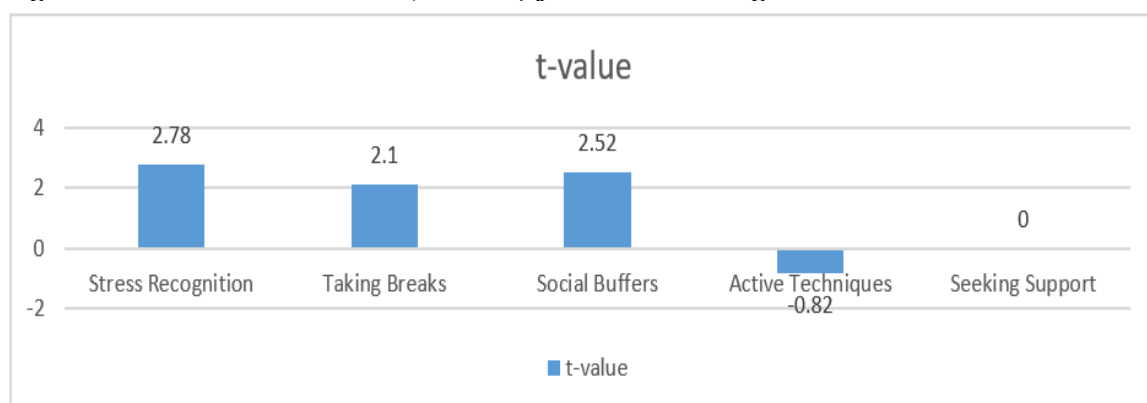


Fig 4: Statistical Deviation (t-values) of Stress Management Habits from Neutral Threshold.

DISCUSSION

The present study elaborately discusses the behavioral dichotomy observed among college-going youth in Jammu & Kashmir regarding their physical activity and stress management profiles. The integration of descriptive, inferential, and distributional analyses reveals a significant reliance on baseline, informal habits, juxtaposed against a systemic underutilization of structured health interventions. The intensely platykurtic distribution observed across all measured variables mathematically underscores this polarization. It indicates that student behaviors do not follow a normative continuum but are instead strictly divided between active practitioners and complete non-practitioners.

Within the physical activity dimension, the significant adherence to moderate physical movement ($t = 2.52$, $p = 0.013$) aligns with the geographic and socio-cultural realities of the J&K region. The mountainous terrain naturally facilitates baseline activities such as trekking and brisk walking. However, the statistically significant deficits in vigorous physical activities ($t = -2.31$, $p = 0.023$) and systematic muscle-strengthening exercises ($t = -2.10$, $p = 0.038$) expose critical gaps in advanced fitness regimens. This deficit often points toward broader institutional inertia within university sport governance and strategic sports development planning [19]. When modernized infrastructure and formalized physical conditioning modules are absent from standard academic curricula, advanced fitness remains a niche pursuit. Enhancing organizational effectiveness within higher education sports directorates is essential to overcome these systemic barriers and make structured physical training universally accessible.

A parallel dichotomy is evident within the psychological coping architecture of the students. While the cohort demonstrated highly significant cognitive awareness of daily stressors ($t = 2.78$, $p = 0.006$) and effectively utilized informal social buffers ($t = 2.52$, $p = 0.013$), their transition to active, structured coping mechanisms—such as targeted mindfulness or deep breathing—was not statistically significant ($t = -0.82$). Furthermore, the inclination to seek formal support from mental health professionals stalled at a neutral equilibrium ($t = 0.00$). This reluctance to engage with formal psychological support networks highlights existing perceptual ceilings among students and broader community stakeholders regarding clinical mental health interventions. Students largely default to informal, community-based coping strategies, which, while highly beneficial, may lack the targeted efficacy required to mitigate severe academic burnout. To build true destination resilience within these regional campus environments, universities must implement collaborative solutions. Establishing highly visible, stigma-free wellness cells that actively instruct students in structured psychological coping—such as meditation and personal counseling—along with advanced physical conditioning is imperative for holistic youth development [20].

CONCLUSION

The current study highlights a crucial dichotomy in the health behaviors of college-going youth in Jammu & Kashmir. While the student population demonstrates adequate baseline resilience through routine moderate physical activity and informal, community-based stress mitigation, there is a pronounced deficit in the adoption of structured health interventions. The starkly platykurtic distribution and inferential statistics mathematically confirm that systematic muscle strengthening, vigorous cardiovascular conditioning, and formal psychological coping mechanisms—such as targeted mindfulness routines and professional counseling—remain highly neglected.

Physical Activity Profiles and Stress Management Coping Architecture Among College-Going Youth in Jammu & Kashmir: A Descriptive and Psychometric Analysis

To address these vulnerabilities and foster genuine destination resilience among the youth, higher education institutions must transcend passive wellness approaches. It is imperative to proactively embed formalized physical education and conditioning modules within the academic curricula and establish accessible, highly visible, and stigma-free mental health support cells across college campuses in the region.

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Physical Activity Profiles and Stress Management Coping Architecture Among College-Going Youth in Jammu & Kashmir: A Descriptive and Psychometric Analysis

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the research, authorship, and/or publication of this article.

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