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A review of literature on construction and standardization of physical activity questionnaire for adolescents in Jammu & Kashmir

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Abstract
Physical activity (PA) is a crucial determinant of adolescent health, impacting physical, mental, and psychosocial well-being. Globally validated physical activity questionnaires (PAQs), though widely used, often lack contextual relevance to diverse cultural and geographical settings. This review highlights the limitations of existing PAQs in capturing the unique activity patterns of adolescents in Jammu and Kashmir (J&K), India, a region characterized by mountainous terrain, traditional lifestyles, and limited infrastructure. Synthesizing literature from national and international sources, the paper identifies a significant research gap: The absence of a culturally sensitive and regionally appropriate PAQ for adolescents in J&K. This review establishes a compelling rationale for constructing and standardizing a localized PAQ that can accurately assess PA levels, inform public health policies, and facilitate targeted interventions.

Keywords: Research Gap, PAQ-A, Jammu & Kashmir, physical activity, adolescents, questionnaire, review, measurement tools

Introduction
Adolescence, a transitional phase between childhood and adulthood, is marked by critical physiological, psychological, and behavioral changes. The World Health Organization (WHO, 2022) [8] emphasizes the importance of promoting physical activity during this period to establish lifelong health-enhancing behaviors. Despite global efforts to promote adolescent physical activity, data indicates that 80% of adolescents are insufficiently active (WHO, 2020) [9], posing significant risks of obesity, cardiovascular disease, and psychosocial disorders.
While standardized tools such as the International Physical Activity Questionnaire (IPAQ) and the Physical Activity Questionnaire for Adolescents (PAQ-A) are widely used, these instruments often reflect Western norms and structured sports activities. They fail to capture the nuanced, culturally-specific, and regionally distinct physical activities of adolescents in settings like Jammu & Kashmir (J&K), where daily life includes unstructured tasks such as traditional games, agricultural labor, and active commuting in mountainous terrain.
This literature review identifies the gaps in existing PAQs, especially in the Indian context, and justifies the need for a localized, standardized PAQ tailored to the adolescents of J&K.

2. Importance of measuring physical activity in adolescents
PA during adolescence supports the development of bone health, cardiovascular fitness, muscular strength, mental resilience, and cognitive function (O'Halloran *et al*., 2022; Chaput *et al*., 2020) [7, 3]. The WHO recommends at least 60 minutes of moderate-to-vigorous physical activity (MVPA) daily for individuals aged 5-17 (WHO, 2020).
Despite known benefits, global trends show declining PA levels among adolescents, with a notable increase in sedentary behavior (Marques *et al*., 2020) [5]. In India, PA among adolescents is decreasing due to urbanization, academic pressures, and increased screen time (Katapally *et al*., 2016; Active Healthy Kids India, 2022) [4]. Precise measurement tools are essential for identifying inactivity levels, monitoring interventions, and informing policy.

3. Limitations of Existing Physical Activity Questionnaires
Widely used PAQs such as IPAQ, PAQ-C, and PAQ-A are structured around school-based and organized sport activities. These tools often neglect.

- Cultural activities such as kite flying, mud wrestling, or local games.
- Unstructured work-related activity like farming, water fetching, or livestock management.
- Transport behaviors involving walking long distances on hilly terrain.
- Region-specific limitations due to weather, security conditions, or infrastructure.

Studies in Ethiopia, China, and rural India have identified poor reliability and low contextual validity in applying standard PAQs in non-Western populations (Mehreen *et al*., 2020) [6].

4. Physical activity and adolescents in Jammu & Kashmir

J&K's demography and terrain are unique. With a large rural adolescent population and challenging topography, PA patterns differ significantly from urban India. Adolescents often engage in physically demanding non-recreational activities such as herding animals, wood collection, or climbing hills to fetch water. However, such activities are absent from standardized PAQs, leading to inaccurate assessments.

Recent studies in the Anantnag district revealed that only 28% of adolescents met daily PA recommendations, with girls showing significantly lower activity levels than boys (Bhat & Murtaza, 2017) [2]. Furthermore, cultural norms, academic burdens, and a lack of recreational infrastructure exacerbate inactivity, particularly for females.

5. National Efforts and Policy Context

The Government of India has launched initiatives like the Fit India Movement, Khelo India, and Rashtriya Kishor Swasthya Karyakram (RKSK) to promote youth health through physical activity. However, these policies often rely on general national data and lack region-specific insights due to insufficient PA measurement tools for states like J&K.

The 2022 WHO Global Status Report highlighted the urgent need for tools that align with GAPPA 2018-2030 goals. Without valid region-specific instruments, assessing progress in remote and underrepresented areas like J&K remains a challenge.

6. Research Gap

Despite multiple PAQs being used worldwide, none have been specifically developed, validated, or standardized for the adolescents of Jammu & Kashmir, Existing instruments:

- Overemphasize structured sports and school activities.
- Neglect informal, traditional or transport-based activities prevalent in rural J&K.
- Do not consider gender-specific roles or the socio-political context of the region.
- Lack data on sedentary behaviors unique to rural adolescents.

The absence of such a tool limits research, underreports PA levels, and hinders evidence-based policymaking.

7. Rationale for Developing a Regional PAQ

The proposed construction and standardization of a Physical Activity Questionnaire for Adolescents (PAQ-A-JK) is crucial for:

- Capturing culturally relevant and environmentally valid PA data.
- Supporting school health programs and state health initiatives.
- Identifying high-risk populations for targeted interventions.
- Developing state-specific norms to benchmark adolescent activity.

The literature clearly supports a shift from generalization to localization in PA measurement strategies.

8. Conclusion

This review confirms a critical gap in physical activity measurement tools applicable to adolescents in Jammu & Kashmir. Existing instruments fall short of capturing the region's diverse activity patterns. The development of a standardized, validated, and culturally adapted PAQ for adolescents in J&K is not only timely but essential. Such a tool will enhance research quality, inform targeted health programs, and contribute to healthier adolescent development in the region.

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