

From Worry to Flow: The Roles of Trait Anxiety and Motivation in Adolescent Judoka

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Abstract

Setting: Judo clubs and academies, India. **Population:** Adolescent judoka aged 13–17 years (N = 120). **Design:** Cross-sectional survey; administered 15–30 minutes after the final bout or training session. **Measures:** Flow Short Scale (FSS), Sport Anxiety Scale-2 (SAS-2), Sport Motivation Scale-II (SMS-II).

Background: Flow – the state of total absorption and enjoyment during performance – is associated with optimal sport outcomes, yet remains poorly understood in adolescent combat sport athletes. While Western-developed instruments such as the FSS, SAS-2, and SMS-II are widely used in sport psychology research, their psychometric suitability for Indian adolescent populations has not been established. Furthermore, descriptive data on flow, competitive anxiety, and sport motivation in Indian judoka are absent from the literature.

Objectives: This study addressed three research questions: (RQ1) What are the levels of flow, anxiety, and motivation in adolescent Indian judoka? (RQ2) Do these variables differ by gender, competition level, and bout outcome? (RQ3) What are the psychometric properties of the FSS, SAS-2, and SMS-II in this population?

Method: One hundred and twenty judoka (aged 13–17 years; minimum two years formal training; competing at district, state, or national level) completed the FSS, SAS-2, and SMS-II 15–30 minutes after their final bout or session. Contextual variables including age, gender, weight category, years of training, training frequency, competition level, and bout outcome were recorded. Data were analysed using descriptive statistics, internal consistency (Cronbach's α), Spearman correlations, independent samples t-tests, and one-way ANOVA.

Results: Athletes reported moderate-to-good post-bout flow (FSS Total: M = 4.72, SD = 0.83) and low-to-moderate trait competitive anxiety (SAS-2 subscales: M = 2.06–2.28). Relative Autonomy Index scores were positive on average (M = 6.60, SD = 8.35), indicating a general orientation toward autonomous motivational regulation. Autonomous motivation was positively associated with flow ($p = .224$, $p = .014$). No significant differences in flow were found by gender ($d = 0.14$), bout outcome ($d = 0.19$), or competition level. Greater years of training were associated with lower cognitive anxiety across Worry ($p = -.357$, $p < .001$) and Concentration Disruption ($p = -.344$, $p < .001$) subscales, but not with somatic anxiety. Several Western instruments demonstrated poor internal consistency in this population, most notably the FSS Flow Total ($\alpha = .547$) and multiple SMS-II subscales ($\alpha = .200-.563$), while two SAS-2 subscales and the SMS-II Identified Regulation subscale reached acceptable thresholds.

Significance & Implications: This study provides the first empirical psychological profile of adolescent Indian judoka and the first evaluation of the FSS, SAS-2, and SMS-II in this population. The pattern of psychometric failures across multiple Western instruments establishes that unexamined cross-cultural instrument transfer carries meaningful validity risk and creates a clear mandate for culturally adapted measurement tools in Indian sport psychology research. Findings offer a foundational reference point for researchers, practitioners, and coaches working within Indian combat sport contexts.

Keywords

Flow, sport anxiety, sport motivation, judo, adolescent athletes, psychometrics, India, cross-cultural assessment.