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Research Paper

Impact of Autonomy and Imagery on Flow Experience of Kathak Dancers: An Empirical Study

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ABSTRACT

Although classical dance is an embodied artistic practice that integrates cognitive, emotional, and physical processes, limited research has examined the psychological factors that contribute to optimal experiential states among dancers. The present study investigates the role of autonomy and imagery abilities in predicting the flow experience among Kathak dancers. **With a sample of 100 Kathak dancers between the ages of 18 and 35**, a cross-sectional research design was employed to explore the relationship between these psychological variables. Participants completed measures assessing autonomy, imagery abilities, and flow experience. Descriptive statistics and correlational analysis were used to examine the relationship among the variables. The findings highlight the importance of psychological skills in enhancing optimal performance states and suggest that developing autonomy and imagery abilities may support improved performance and experiential engagement in classical dance training.

Keywords: *Autonomy, Imagery, Flow Experience, Kathak Dance, Psychological Factors*

Dance is a complex artistic and cultural activity that incorporates aesthetic communication, emotional expression, physical movement, and cognitive involvement. Dance has been a potent tool for ritual, storytelling, and artistic expression throughout history. Apart from its cultural and artistic value, dancing is becoming more widely acknowledged as a setting for examining psychological functions like motivation, creativity, focus, and emotional control. Kathak has a special place among India's many classical dance styles because of its emotive narrative, intricate rhythms, and rich historical heritage. Kathak, which has its roots in northern Indian storytelling customs, uses complex footwork, rhythmic patterns, spins, gestures, and facial expressions to portray stories and emotions.

One of the most widely studied concepts related to optimal experience and performance is the concept of flow. When people are in a state of flow, they get so engrossed in what they are doing that they frequently lose track of time and outside distractions. In fields like athletics, music, education, and the performing arts, where people aim for optimal involvement and peak performance. Flow is especially important in dance because it enables

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dancers to combine rhythm, movement, and emotion into a flawless performance. When dancers enter a flow state, their movements appear fluid and expressive, and their performance becomes more authentic and engaging for both the performer and the audience.

A number of psychological and cognitive elements affect the feeling of flow in dancing. Among these, autonomy is said to be a crucial element that could support a person's capacity to participate completely in an activity. Autonomy in performing arts contexts is demonstrated by a performer's self-awareness, capacity to handle performance-related difficulties, and consideration for fellow performers. Autonomy may provide dancers more self-assurance when it comes to understanding choreography, adjusting to performance settings, and keeping control of their movements during intricate sequences.

Imagery is another significant psychological component that could affect the feeling of flow. It is the capacity to create and modify mental images of things, motions, spatial configurations, or experiences without direct sensory input. Imagery is widely acknowledged in sports psychology and the performing arts as a potent mental ability that improves performance, memory, and learning. Imagery is a common practice technique used by dancers to picture expressive gestures, spatial patterns, and movement sequences. Dancers can enhance their coordination, timing, and confidence by mentally rehearsing movements before executing them.

Investigating the role of autonomy and imagery in facilitating flow may also have practical implications for dance training and education. By identifying the psychological skills that contribute to enhanced performance experiences, instructors and dancers can develop strategies to cultivate these abilities during training.

REVIEW OF LITERATURE

Flow is now understood as a neurocognitive and performance-related psychological state characterized by deep focus, reduced self-consciousness, and optimal engagement (**Harris et al., 2025**). Recent research has moved beyond classical definitions and examined the neural and physiological basis of flow. A **2025 EEG-based study (Harris et al., 2025)** reported that flow is associated with specific patterns of brain activity, particularly reduced prefrontal control, allowing for more automatic and efficient performance.

In dance performance, flow has been studied in real-life contexts. **Jaque et al. (2020)** found that dancers experience flow alongside measurable physiological changes such as autonomic nervous system activation, suggesting that flow is both a psychological and biophysiological state. Supporting this, a **2024 performance study (Versano & Cancio, 2024)** indicated that dancers in flow report heightened present-moment awareness, reduced anxiety, and improved expressive quality.

Recent literature shows a growing interest in dancers' psychological functioning. A **2025 systematic review (Araújo et al., 2025)** highlighted that most research on dance psychology has emerged in the last few years (2023–2025), emphasizing factors such as emotional regulation, engagement, and well-being as central to performance outcomes.

Autonomy has also been identified as a critical determinant of optimal performance. Contemporary studies (**Lin et al., 2025; Yu et al., 2025**) indicate that dancers who experience greater autonomy demonstrate higher intrinsic motivation, persistence, and

cognitive engagement. Autonomy-supportive environments allow performers to interpret movement creatively and adapt to changing performance demands, thereby facilitating conditions necessary for flow.

Mental imagery remains a key cognitive factor in performance enhancement. Recent research (**Gorwa & Fryzowicz, 2025; Versano & Cancio, 2024**) shows that imagery not only improves motor learning and coordination but also strengthens the emotion–movement connection, enabling dancers to perform with greater expressiveness. Experimental findings further suggest that imagery can enhance neuromuscular activation and movement precision, highlighting its direct influence on performance execution.

Furthermore, emerging research in technology and performance science (**Foster et al., 2023; Zhang et al., 2025**) highlights the use of AI-based feedback systems, motion tracking, and emotion recognition tools in dance training. These studies demonstrate that real-time feedback and cognitive engagement significantly enhance learning, creativity, and performance quality.

In the Indian context, research on the psychological aspects of classical dance remains limited. However, recent studies (**Sharma et al., 2024**) on traditional dance forms highlight the complex interaction of cognitive, emotional, and motor processes required for performance, indicating the relevance of imagery and psychological engagement.

Objectives of the Study

- **To examine the level of autonomy among Kathak dancers.**
- **To assess the imagery abilities of Kathak dancers**, including object imagery, spatial imagery, and verbal imagery.
- **To measure the flow experience among Kathak dancers** during dance performance.
- **To examine the relationship between autonomy and flow experience among Kathak dancers.**
- **To examine the relationship between imagery abilities and flow experience among Kathak dancers.**
- **To determine the impact of autonomy and imagery abilities on the flow experience among Kathak dancers.**

Hypotheses

- **H1:** Kathak dancers demonstrate a significant level of autonomy.
- **H2:** Kathak dancers demonstrate significant imagery abilities (object, spatial, and verbal imagery).
- **H3:** Kathak dancers experience a significant level of flow during dance performance.
- **H4:** Autonomy is significantly related to the flow experience among Kathak dancers.
- **H5:** Imagery abilities (object imagery, spatial imagery, and verbal imagery) are significantly related to the flow experience among Kathak dancers.
- **H6:** Autonomy and imagery abilities significantly predict the flow experience among Kathak dancers.

METHODOLOGY

Research Design

The present study employed a **quantitative research design** to examine the impact of autonomy and imagery abilities on the flow experience among Kathak dancers. A **cross-sectional correlational research design** was used to investigate the relationships between the variables, data was collected using a survey-based manner both online and offline. The collected data was evaluated using appropriate statistical approaches to determine the correlations and predicted influence of autonomy and imagery capacities on Kathak dancers' flow experiences.

Participants

The sample consisted of **100 Kathak dancers aged 18–35 years**. All participants were trained practitioners of Kathak dance and were actively involved in dance practice or performance. Participants were recruited from **Kathak dance academies, cultural institutions, and independent dance training groups**. Both **male and female dancers** were included in the study to ensure a broader representation of Kathak practitioners.

Inclusion Criteria

- Had a **minimum of 3 years of formal training in Kathak dance**
- Were **actively engaged in regular practice and/or performance within the last 6 months**
- Were **between the ages of 18 and 35 years**
- Were able to **comprehend and respond to self-report questionnaires in English or Hindi**

Exclusion Criteria

- Reported a **diagnosed severe psychological or neurological disorder**
- Had **less than three years of Kathak dance training**

Sample Size

A total sample of **100 Kathak dancers** was selected for the study. This sample size was considered adequate for examining **relationships and predictive effects among autonomy, imagery abilities, and flow experience** using correlational and regression analyses.

Sampling Technique

A **purposive sampling technique** was employed to recruit participants who met the specific criteria of Kathak dance training. Participants were recruited from:

- **Kathak dance academies**
- **Cultural institutions and performing arts organizations**
- **Independent Kathak training groups and dance communities**

Measures

The following standardized self-report psychological tools were used:

1. Autonomy Connectedness Scale (ACS-30) by Bekker (1993).
2. Object–Spatial–Imagery–Verbal Questionnaire (OSIVQ) Kozhevnikov and Blazhenkova (2006).
3. Flow State Scale (FSS) Jackson and Marsh (1996).

Procedure

Prior to data collection, the purpose and objectives of the research were clearly explained to the participants. Participants who met the **inclusion criteria** were approached, informed consent was obtained, before the administration of the questionnaires. Data were collected using a **self-report questionnaire method**. The questionnaires were administered either **in person or through an online survey format**, depending on the accessibility and availability of the participants. On an average, the entire questionnaire required approximately **20–25 minutes** to complete. After the completion of the questionnaires, the responses were carefully reviewed to ensure **completeness and consistency**. The collected data were then organized and coded for statistical analysis. All responses were entered into a statistical software program to facilitate further analysis of the relationships between **autonomy, imagery abilities, and flow experience among Kathak dancers**.

Statistical Analysis

Data were analyzed using **SPSS version 28**. The following analyses were conducted:

- **Descriptive statistics** (mean, standard deviation)
- **Pearson's correlation analysis**
- **Multiple regression analysis**

Statistical significance was set at **$p < .05$**, and effect sizes were reported to interpret the **practical significance** of the findings.

RESULTS

1. Descriptive Statistics

Variable	mean	Standard Deviation
Autonomy	3.54	0.53
Object Imagery	3.68	0.47
Spatial Imagery	3.40	0.51
Verbal Imagery	3.29	0.54
Flow Experience	4.01	0.38

Interpretation

- **Moderately high levels of autonomy and imagery abilities** was found in kathak dancers
- The mean score for **flow experience (M = 4.01)** suggests that participants frequently experienced flow during dance practice or performance.

2. Pearson's Correlation Analysis

Variable	1	2	3	4	5
Autonomy	1				
Object Imagery	0.09	1			
Spatial Imagery	-0.04	0.20	1		
Verbal Imagery	-0.09	-0.06	-0.05	1	
Flow Experience	0.45	0.33	0.33	-0.02	1

Interpretation

- **Autonomy showed a moderate positive correlation with flow experience (r = .45).**

- **Object imagery and spatial imagery showed positive correlations with flow (r = .33).**
- **Verbal imagery showed almost no relationship with flow (r = −.02).**

This suggests that dancers with **greater autonomy and stronger imagery abilities—especially object and spatial imagery—tend to experience higher levels of flow during dance performance.**

3. Multiple Regression Analysis

Predictor	Beta
Autonomy	**0.31**
Object Imagery	**0.19**
Spatial Imagery	**0.22**
Verbal Imagery	**0.04**

Model Fit
R^2 = **0.37**

Interpretation
The regression model explained **37% of the variance in flow experience** among Kathak dancers.

- **Autonomy was the strongest predictor of flow experience.**
- **Object imagery and spatial imagery also contributed positively to predicting flow.**
- **Verbal imagery showed a minimal predictive effect.**

These findings suggest that dancers who possess **greater self-directed functioning and stronger mental imagery abilities are more likely to experience optimal psychological states such as flow during dance practice and performance.**

DISCUSSION AND CONCLUSION

The present study aimed to examine the impact of autonomy and imagery abilities on the flow experience among Kathak dancers. The findings of the study provide valuable insights into the psychological processes that contribute to optimal performance states in classical dance. Flow is widely understood as a state of deep absorption, concentration, and intrinsic enjoyment that occurs when individuals are fully engaged in an activity. In the context of dance, experiencing flow can enhance both artistic expression and performance quality.

The study revealed that Kathak dancers expressed moderately high levels of autonomy, visualization ability, and flow experience. This shows that trained dancers have psychological traits that promote focused attention and immersive performance. Classical dance traditions like Kathak necessitate tremendous concentration, rhythmic coordination, expressive storytelling, and emotional participation, which may naturally promote flow.

The findings also revealed that autonomy and imagery abilities, specifically object and spatial imagery, were favorably associated with flow experience. As Dancers' autonomy allows them to control their movements, interpret choreography creatively, and remain completely present during the performance and their imagery abilities frequently allow them to utilize mental visualization to rehearse moves, anticipate spatial patterns, and coordinate complex sequences. Autonomy emerged as the strongest predictor of flow. Object and

spatial imagery also helped to predict flow experience, but verbal imagery showed a little relationship with flow experience. This may be because, Kathak dancers rely more heavily on bodily awareness, rhythm, and visual imagery to execute movements effectively, which may explain the limited role of verbal imagery in predicting flow.

Overall, the study's findings support the hypothesis that both autonomy and imagery influence the sense of flow during dance performance. Autonomy provides the motivational framework for self-directed engagement, whereas imaging abilities help with cognitive preparation and movement visualization. Together, these psychological processes generate settings conducive to optimal performance levels.

The findings of this study also add to the growing corpus of research in dance psychology and performance studies by emphasizing the importance of psychological abilities in classical dance traditions. Understanding these psychological variables can be beneficial for dance educators and trainers, as improving autonomy and imaging abilities in dancers can improve their performance experience and creative expression.

Implications of the Study

First, the results highlight the importance of developing psychological skills such as autonomy in dancers. Dance educators and trainers may encourage dancers to cultivate self-awareness, independent decision-making, and adaptability during practice and performance. Second, the study emphasizes the role of imagery abilities in dance performance. Incorporating mental imagery training into dance education may help dancers visualize movements more effectively, improve spatial awareness, and strengthen concentration. Thirdly the findings contribute to the field of performance psychology by demonstrating that both autonomy and imagery are important in achieving flow. Understanding these factors may help researchers and practitioners design interventions that support dancers' psychological well-being and performance effectiveness. Such psychological development may enhance dancers' ability to experience flow and maintain deeper engagement in their artistic practice.

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Conflict of Interest

The author(s) declared no conflict of interest.

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