



## **Fostering transgender inclusivity in Indian physical education: a provision - support centric approach**

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### **ABSTRACT**

*This research paper investigated the imperative opinion of integrating transgender individuals into the landscape of Indian higher education, specifically focusing on physical education. A survey of N=70 physical education professionals, comprising assistant professors, associate professors, and professors across diverse Indian institutions, was conducted. To ensure the accuracy and reliability of the gathered information, a meticulously designed and validated "Provisions and Support" questionnaire was employed; this study assessed the nuanced dimensions of transgender inclusion. The questionnaire, subjected to rigorous testing for reliability and validity, emerged as a robust instrument, facilitating a nuanced understanding of the unique needs associated with transgender inclusion in Indian physical education. The "Self-Administrative Provisions and Support Questionnaire" (SAPSQ) survey, encompassing Schemes, Scholarships, Reservations, and Welfare, thoroughly comprehended inclusion facets. In the research, results showed overwhelmingly positive responses from physical education professionals, highlighting the pressing need for proactive steps to create a more inclusive environment. To highlight the importance of customized methods, prioritizing their implementation was essential. This study shed light on critical aspects through the questionnaire. It provided valuable insights into the status of including transgender individuals in Indian physical education, stressing the urgency for proactive steps to create a more inclusive environment. It proposed expanding the questionnaire's testing to more extensive and more diverse samples, with the potential for global applicability. The study underscored the pivotal role played by "Provisions and Support" in mitigating the unique challenges confronted by transgender students, advocating for their comprehensive inclusion within the domain of physical education in Indian higher education.*

**Key Words:** Transgender Inclusion, Physical Education, Provision-Support, Scheme and Scholarship, Reservation, Welfare, Questionnaire.

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### **INTRODUCTION**

In 2014, the Supreme Court of India made a groundbreaking decision officially recognizing transgender people as a distinct third gender (1). This decision significantly impacted the educational experiences of transgender individuals in India, setting the stage for future developments. The term 'Transgender' or 'Trans' encompasses individuals whose gender identity does not align with their assigned gender at birth (2). Physical Education (PE) is vital in global education, contributing to overall well-being and fostering physical fitness and personality development (3). The International Charter of Physical Education and Sports, instituted by UNESCO in 1978, highlights PE's role in providing resources, constructing assessment systems, and fostering educational development. Key milestones punctuate the historical trajectory of PE in India. 1948, the Dr. S. Radha Krishnan Committee on School Education was formed, offering guidance on various facets of PE. The Central Advisory Board on Physical Education and Recreation emerged in 1950, emphasizing the imperative of compulsory PE in schools and colleges (4, 5). These efforts underscore the acknowledgment of PE as an indispensable education component, demonstrating the government's commitment to promoting its significance. The landscape of PE in Indian higher education, while marked by historical milestones and governmental mandates emphasizing its importance, still grapples with challenges related to inclusivity and support for marginalized communities, including transgender individuals. Despite efforts to promote diversity and inclusion, transgender students often encounter barriers to participation and full engagement in PE programs, ranging from systemic biases to inadequate support structures. Integrating transgender individuals into PE poses a formidable challenge, revealing

deficiencies in policies, awareness, infrastructure, and knowledge (6, 7, 8, 9, 10). Drury's research highlights that PE teachers feel ill-equipped to establish safe and inclusive learning environments for transgender youth. This deficiency raises significant concerns regarding transgender issues in PE (6). Studies by Williamson and Drury identify challenges within the context of transgender inclusion in PE classes, emphasizing the need for more knowledge and an inclusive environment (6, 11). Insufficient legal protection for transgender rights exacerbates these difficulties, impeding access to education (6, 8, 12). These findings underscore the multifaceted obstacles hindering effective inclusion, emphasizing the need for comprehensive strategies. The Supreme Court of India mandated measures to categorize transgender individuals as socially and educationally backward citizens, extending reservations for admission to educational institutions and public appointments (13). The Transgender Bill emphasizes inclusive education in government-funded institutions, prohibiting discrimination based on gender identity (14). Inclusion in education is crucial for the well-being of transgender individuals, requiring educational institutions to recognize and respect the gender identity of every student (15). Implementing an inclusive PE program is paramount, as highlighted by Bhattacharya et al. (8).

A key component of this research is the gathering opinion and utilization of a meticulously designed and validated questionnaire, termed the "Self-Administrative Provisions and Support Questionnaire" (SAPSQ). This questionnaire serves as a tool for gathering insights from PE professionals regarding their perspectives on transgender inclusion and their perceptions of the effectiveness of existing support structures. By employing the SAPSQ, this study aims to capture nuanced data that can inform the development of targeted interventions and policies aimed at fostering transgender inclusion in PE. This pioneering effort focuses on the influence of educators in creating inclusive spaces and aims to gather insights specific to the Indian context. Anticipated outcomes hold the potential to guide policies actively fostering a more inclusive environment for transgender individuals in PE, thus addressing a significant gap in understanding provision and support within the Indian context (16). This condensed overview provides critical insights into the intersection of transgender inclusion, PE, and the Indian educational landscape, emphasizing the need for comprehensive strategies and inclusive policies. Furthermore, this research underscores the importance of inclusive provision and support in creating environments that not only accommodate but also empower transgender students to fully participate in PE activities. Inclusive provision encompasses a variety of initiatives, which encompass the development of inclusive curriculum, the provision of gender-affirming facilities, and the implementation of training programs aimed at enhancing educators' awareness and sensitivity to transgender issues (6). By emphasizing the role of comprehensive provision and support in facilitating transgender inclusion in PE, this research contributes to ongoing efforts to promote diversity, equity, and inclusion in Indian higher education. Through a proactive approach grounded in data-driven insights and collaborative engagement this study aims to foster environments where all students, regardless of gender identity, can thrive and realize their full potential in the field of physical education (6, 7, 8, 9, 10, 17).

## MATERIAL AND METHODS

### Participants

The Human Investigations Committee, Department of Physical Education, Banaras Hindu University, approved this research. We tested the initial version of the "Self-Administrative Provisions and Support Questionnaire" (SAPSQ) among a randomly selected sample of n=70 university professors, Associate Professors, and Assistant Professors in physical education from different universities in India. Seventy subjects completed the questionnaire (54 males and 16 females). The researcher distributed data collected through Google Forms and hard copies individually in person at different universities from August to October 2023. Each factor covered broad topics related to schemes, scholarships, reservations and welfare. All participants in this research signed a written informed consent form, and no vulnerable populations were involved.

**Table 1: Demographic Characteristics (N=70)**

| Characteristics             | N         | (%)         |
|-----------------------------|-----------|-------------|
| Male                        | 54        | 77.14%      |
| Female                      | 16        | 22.85%      |
| <b>Participants (Total)</b> | <b>70</b> | <b>100%</b> |
| Professors                  | 3         | 4.2%        |
| Associate Professors        | 6         | 8.5%        |
| Assistant Professors        | 61        | 87.14%      |
| <b>Participants (Total)</b> | <b>70</b> | <b>100%</b> |

### Data Analysis:

**CFA and EFA:** Using SPSS 20 and AMOS, the researcher tested the questionnaire's reliability and validity. The study used factor analysis (Confirmatory factor analysis, CFA) and exploratory factor analysis (EFA).

**Descriptive Statistics:** We subjected the data from 70 respondents to detailed analysis using SPSS 20. The researcher utilized descriptive statistics to explore the dataset's characteristics and presented the results in frequency, percentage, and valid percentage for each of the four identified factors.

**Questionnaire:** This self-made questionnaire study explored the "Provisions and Support" scenario for transgender students in the Indian PE context. After drafting and refining the questionnaire through face validity and expert revisions and conducting a full-fledged pilot test, the physical education faculty engaged across various universities, institutions, and colleges in India. The study, divided into four sections, utilized an initial pool of 110 items prepared by PE experts. Eighty items were selected, with 20 for each section and five per factor. The finalized 12-item Self-administrative section two 'Provisions and Support' Questionnaire included for this study and used a five-point Likert scale for participant responses, and validating its items involved consulting experts in PE.

### RESULTS

Develop the Self-administrative Provisions and Support Questionnaire (SAPSQ) tailored for higher education PE professionals. This instrument sought to capture opinions and concerns regarding provisions and support for including transgender individuals in the field. Meticulous testing established the SAPSQ's high reliability (Cronbach's  $\alpha = .948$ ) and validity, with four identified dimensions: Schemes, Scholarships, Reservations, and Welfare. Confirmatory Factor Analysis (CFA) supported the four-factor model, meeting predefined cutoff values for validity indices. Additionally, fit indices, including RMR, GFI, TLI, CFI, and RMSEA, confirmed the questionnaire's robustness (18, 19, 20, 21, 22). It affirms the SAPSQ's value in addressing challenges and criteria for transgender inclusion in Indian PE.

**Table 2: Confirmatory factor analysis fit indices for the SACCQ Model in AMOS**

|             | Recommended Value | Models Indicates |
|-------------|-------------------|------------------|
| $\chi^2/df$ | <3                | 1.360            |
| GFI         | >0.9              | 0.863            |
| TLI         | >0.9              | 0.970            |
| CFI         | >0.9              | 0.978            |
| RMR         | < 0.05            | 0.046            |
| RMSEA       | <0.1              | 0.072            |

Table 2 results shows the results of indicators model for examining the factor structure of the questionnaire through CFA. Based on the indicators' values the model is fit as the obtained values of indices are as per the recommended values.

The composite reliability of each construct is higher than 0.6 and more significant than the average variance extracted. Generally, factor loadings and CR should equal or greater than 0.7 for good convergent validity (23, 24). The extracted average variance (AVE) should be higher than the multiple share variance (MSV) (25). The AVE and MAS results indicate that AVE is higher than MSV. It verifies the existence of convergent validity in the instrument. The MSV indicates the discriminant validity.

**Table 3: Convergent and Discriminant Validity Measure of various construct**

| CONSTRUCT | CR    | AVE   | MSV   |
|-----------|-------|-------|-------|
| F1        | 0.906 | 0.764 | 0.713 |
| F2        | 0.915 | 0.781 | 0.713 |
| F3        | 0.923 | 0.799 | 0.649 |
| F4        | 0.938 | 0.834 | 0.524 |

Table 3 results shows based on the CR, AVE, and MSV indicators' values the model is fit as the obtained values of indices are as per the recommended values.

Positively, here is the final questionnaire developed after Confirmatory Factor Analysis (CFA) and Exploratory Factor Analysis (EFA) for data collection: This questionnaire is designed to gather insights into the perceptions and opinions of physical education professionals regarding transgender inclusivity in Indian higher education.

**Table 4: Self-administrative Provisions and Support Questionnaire (SAPSQ)**

| Schemes      |   | S.D | D | U.D | A | S.A |
|--------------|---|-----|---|-----|---|-----|
| 1            | Well-designed schemes should be introduced  |     |   |     |   |     |
| 2            | Schemes should address specific needs   |     |   |     |   |     |
| 3            | Implement schemes that support research   |     |   |     |   |     |
| Scholarships |   |     |   |     |   |     |
| 1            | Scholarships should encourage inclusive physical education                          |     |   |     |   |     |
| 2            | Scholarships should contribute to overcome the financial burden                     |     |   |     |   |     |
| 3            | Scholarships should contribute to the quality of learning                           |     |   |     |   |     |
| Reservations |   |     |   |     |   |     |
| 1            | Reservation policies should be developed  |     |   |     |   |     |
| 2            | Transgender reserved seats should be ensured  |     |   |     |   |     |
| 3            | Reservation helps to create an accepting environment.                               |     |   |     |   |     |
| Welfare      |   |     |   |     |   |     |
| 1            | Develop welfare schemes to support  |     |   |     |   |     |
| 2            | Collaboration of government and public sector through welfare schemes               |     |   |     |   |     |
| 3            | Welfare schemes should offer counselling services for specific needs and challenges |     |   |     |   |     |

S.D= Strongly Disagree, D=Disagree, U.D=Undecided, A=Agree, S.A= Strongly Agree

Table 4 presents the twelve selected items for the "Provisions and Support" section of the questionnaire, focusing on transgender inclusivity in Indian higher education. These items were finalized through CFA and EFA. Each item addresses specific aspects and aimed at creating a supportive environment for transgender individuals within educational institutions.

After finalizing the questionnaire based on Confirmatory Factor Analysis (CFA) and Exploratory Factor Analysis (EFA), data from 70 respondents were collected. The researcher conducted a descriptive analysis of the SAPSQ's (Schemes, Scholarships, Reservations, and Welfare) factors pertaining to transgender inclusivity in Indian physical education. This analysis focused on frequency, percentage, and valid percentage representation of responses. The structured analysis aimed to provide a clear understanding of the responses received for each factor item within the SAPSQ's. The goal was to aid in the assessment of transgender inclusivity in Indian physical education by examining the distribution and perceptions of various support provisions among physical education professionals.

**Table 5: Factor One Schemes**

| ITEM-1: <i>Well-designed schemes should be introduced</i> | Frequency | Percent | Valid Percent |
|---|-----------|---------|---------------|
| Strongly Disagree   | 5         | 7.1     | 7.1           |
| Disagree  | 3         | 4.3     | 4.3           |
| Undecided   | 3         | 4.3     | 4.3           |
| Agree   | 34        | 48.6    | 48.6          |
| Strongly Agree  | 25        | 35.7    | 35.7          |
| Total   | 70        | 100.0   | 100.0         |

  

| ITEM-2: <i>Schemes should address specific needs</i> | Frequency | Percent | Valid Percent |
|--|-----------|---------|---------------|
| Strongly Disagree                                    | 5         | 7.1     | 7.1           |
| Disagree   | 4         | 5.7     | 5.7           |
| Undecided  | 5         | 7.1     | 7.1           |
| Agree  | 38        | 54.3    | 54.3          |
| Strongly Agree                                       | 18        | 25.7    | 25.7          |
| Total  | 70        | 100.0   | 100.0         |

  

| ITEM-3: <i>Implement schemes that support research</i> | Frequency | Percent | Valid Percent |
|--|-----------|---------|---------------|
| Strongly Disagree                                      | 4         | 5.7     | 5.7           |
| Disagree   | 2         | 2.9     | 2.9           |
| Undecided  | 3         | 4.3     | 4.3           |
| Agree  | 32        | 45.7    | 45.7          |
| Strongly Agree   | 29        | 41.4    | 41.4          |
| Total  | 70        | 100.0   | 100.0         |

Table 5 illustrates respondents' attitudes toward respectively items one, two, and three majority of respondents 84.3%,79.9%, and 87.1% expressed agreement (Agree or Strongly Agree) with the statements, indicating a positive inclination toward the implementation of structured plans.

**Table 6: Factor Two Scholarships**

| <b>ITEM-1: Scholarships should encourage inclusive physical education</b> | Frequency | Percent | Valid Percent |
|---|-----------|---------|---------------|
| Strongly Disagree   | 6         | 8.6     | 8.6           |
| Disagree  | 1         | 1.4     | 1.4           |
| Undecided   | 3         | 4.3     | 4.3           |
| Agree   | 36        | 51.4    | 51.4          |
| Strongly Agree  | 24        | 34.3    | 34.3          |
| Total   | 70        | 100.0   | 100.0         |

  

| <b>ITEM-2: Scholarships should contribute to overcome the financial burden</b> | Frequency | Percent | Valid Percent |
|--|-----------|---------|---------------|
| Strongly Disagree  | 3         | 4.3     | 4.3           |
| Disagree   | 2         | 2.9     | 2.9           |
| Undecided  | 4         | 5.7     | 5.7           |
| Agree  | 37        | 52.9    | 52.9          |
| Strongly Agree   | 24        | 34.3    | 34.3          |
| Total  | 70        | 100.0   | 100.0         |

  

| <b>ITEM-3: Scholarships should contribute to the quality of learning</b> | Frequency | Percent | Valid Percent |
|--|-----------|---------|---------------|
| Strongly Disagree  | 4         | 5.7     | 5.7           |
| Disagree   | 2         | 2.9     | 2.9           |
| Undecided  | 3         | 4.3     | 4.3           |
| Agree  | 35        | 50.0    | 50.0          |
| Strongly Agree   | 26        | 37.1    | 37.1          |
| Total  | 70        | 100.0   | 100.0         |

Table 6 illustrates respondents' attitudes toward respectively items one, two, and three majority of respondents 85.7%,87.2%, and 87.1% expressed agreement (Agree or Strongly Agree) with the statements, indicating a positive inclination toward the implementation of structured plans.

**Table 7: Factor Three Reservations**

| <b>ITEM-1: Reservation policies should be developed</b> | Frequency | Percent | Valid Percent |
|---|-----------|---------|---------------|
| Strongly Disagree                                       | 8         | 11.4    | 11.4          |
| Disagree  | 9         | 12.9    | 12.9          |
| Undecided   | 6         | 8.6     | 8.6           |
| Agree   | 30        | 42.9    | 42.9          |
| Strongly Agree  | 17        | 24.3    | 24.3          |
| Total   | 70        | 100.0   | 100.0         |

  

| <b>ITEM-2: Transgender reserved seats should be ensured</b> | Frequency | Percent | Valid Percent |
|---|-----------|---------|---------------|
| Strongly Disagree   | 6         | 8.6     | 8.6           |
| Disagree  | 8         | 11.4    | 11.4          |
| Undecided   | 5         | 7.1     | 7.1           |
| Agree   | 32        | 45.7    | 45.7          |
| Strongly Agree  | 19        | 27.1    | 27.1          |
| Total   | 70        | 100.0   | 100.0         |

  

| <b>ITEM-3: Reservation helps to create an accepting environment</b> | Frequency | Percent | Valid Percent |
|---|-----------|---------|---------------|
| Strongly Disagree   | 7         | 10.0    | 10.0          |
| Disagree  | 6         | 8.6     | 8.6           |
| Undecided   | 6         | 8.6     | 8.6           |
| Agree   | 33        | 47.1    | 47.1          |
| Strongly Agree  | 18        | 25.7    | 25.7          |
| Total   | 70        | 100.0   | 100.0         |

Table 7 illustrates respondents' attitudes toward respectively items one, two, and three majority of respondents 67.2%, 72.8%, and 72.8% expressed agreement (Agree or Strongly Agree) with the statements, indicating a positive inclination toward the implementation of structured plans.

**Table 8: Factor Four Welfare**

| <b>ITEM-1: Develop welfare schemes to support</b> | Frequency | Percent | Valid Percent |
|---|-----------|---------|---------------|
| Strongly Disagree                                 | 3         | 4.3     | 4.3           |
| Disagree  | 3         | 4.3     | 4.3           |
| Undecided   | 6         | 8.6     | 8.6           |
| Agree   | 39        | 55.7    | 55.7          |
| Strongly Agree                                    | 19        | 27.1    | 27.1          |
| Total   | 70        | 100.0   | 100.0         |

| <b>ITEM-2: Collaboration of government and public sector through welfare schemes</b> | Frequency | Percent | Valid Percent |
|--|-----------|---------|---------------|
| Strongly Disagree  | 5         | 7.1     | 7.1           |
| Disagree   | 3         | 4.3     | 4.3           |
| Undecided  | 7         | 10.0    | 10.0          |
| Agree  | 34        | 48.6    | 48.6          |
| Strongly Agree   | 21        | 30.0    | 30.0          |
| Total  | 70        | 100.0   | 100.0         |

| <b>ITEM-3: Welfare schemes should offer counselling services for specific needs and challenges</b> | Frequency | Percent | Valid Percent |
|--|-----------|---------|---------------|
| Strongly Disagree  | 4         | 5.7     | 5.7           |
| Disagree   | 2         | 2.9     | 2.9           |
| Undecided  | 7         | 10.0    | 10.0          |
| Agree  | 36        | 51.4    | 51.4          |
| Strongly Agree   | 21        | 30.0    | 30.0          |
| Total  | 70        | 100.0   | 100.0         |

Table 8 illustrates respondents' attitudes toward respectively items one, two, and three majority of respondents 82.8%, 78.6%, and 81.4% expressed agreement (Agree or Strongly Agree) with the statements, indicating a positive inclination toward the implementation of structured plans.

## DISCUSSION

The findings of this study revealed significant insights into the challenges and opportunities surrounding transgender inclusion in Indian higher education, particularly within the domain of physical education (PE). Drury's research, indicating a knowledge gap among PE teachers regarding transgender inclusion, underscored the urgent need for proactive measures to address this deficiency (6, 7). The administration of the Self-administrative Provisions and Support Questionnaire (SAPSQ) to 70 PE professionals yielded valuable data, demonstrating high reliability (Cronbach's  $\alpha = .948$ ) and validity through factor analyses.

The results of the SAPSQ survey highlighted a collective acknowledgment among PE professionals of the need for tailored approaches to transgender inclusion. Notably, within the Schemes factor, respondents favored well-designed schemes (84.3%), addressing specific needs (79.9%), and supporting research (87.1%). Similarly, in the Scholarships factor, strong support was expressed for scholarships promoting inclusive PE (85.7%), alleviating financial burdens (87.2%), and enhancing learning quality (87.1%). These findings underscored the importance of targeted financial support and resources to facilitate transgender inclusion in PE programs. Furthermore, the Reservations factor received positive responses (ranging from 47.1% to 72.8%), with support for reservation policies (67.2%), transgender reserved seats (72.8%), and recognizing reservations' role in creating an accepting environment (72.8%). This indicated a recognition among PE professionals of the necessity for affirmative action measures to ensure equitable opportunities for transgender students. Within the Welfare factor, respondents favored developing welfare schemes (82.8%), collaborative efforts between government and public sectors (78.6%), and counseling services for specific needs (81.4%). These findings underscored the importance of holistic support mechanisms, including mental health services and collaborative partnerships, to address the multifaceted challenges faced by transgender students in PE.

Physical educators played a pivotal role in creating inclusive environments by fostering understanding and actively addressing negative attitudes toward transgender students. The overwhelmingly positive responses from PE professionals underscored the urgency for proactive steps to enhance inclusivity Block (26). Continued development and implementation of tailored provisions were necessary to address the unique challenges faced by transgender students and promote their full participation and engagement in PE programs (7, 10, 17). These findings provided empirical evidence of the pressing need for comprehensive provision and support to foster transgender inclusion in Indian higher education, particularly within the realm of physical education. By highlighting the challenges and opportunities identified through the SAPSQ survey data, this study advocated for targeted interventions and policies aimed at creating environments where all students, regardless of gender identity, could thrive and realize their full potential in the field of physical education (6, 7, 12, 15, 16, 17).

### CONCLUSION

The research reveals a positive outlook among PE professionals toward including transgender individuals in PE. The Self-administrative Provisions and Support Questionnaire (SAPSQ) is reliable, demonstrating high validity and reliability. The legal recognition of transgender individuals in India and the proactive stance of PE professionals signifies a step towards creating inclusive educational spaces. The study emphasizes the need for tailored approaches and support mechanisms. With their influential role, physical educators can actively contribute to inclusive environments by addressing knowledge gaps and fostering acceptance. The overwhelmingly positive responses highlight a willingness to embrace transgender inclusion. In conclusion, the SAPSQ contributes academically and provides practical insights. It signals a positive shift and advocates for continued efforts to make PE more inclusive for transgender individuals Education.

### FURTHER STUDIES

To enhance the robustness of our findings, future studies should consider broader and more diverse samples, potentially extending the application of the SAPSQ to a global context within the field of PE. A more extensive investigation would yield a more holistic understanding of transgender inclusion in PE on a global scale.

### AUTHOR CONTRIBUTION

Debraj Bhattacharya played a significant role in collecting data, conducting data analysis, and drafting the research paper. Their contributions ensured the empirical foundation and coherence of the study's findings. Deepak Kumar Dogra's expertise was pivotal in shaping the study's design and providing critical corrections to enhance the quality and accuracy of the research paper. The collaborative efforts ensured the thoroughness and integrity of the study, enriching its overall contribution to the field.

### ETHICS APPROVAL

Ethical approval for the research was obtained from the institutional committee, and departmental approval was secured before data collection. Participants received an information sheet before providing written consent.

### CONFLICT OF INTEREST

The authors declared no conflicts of interest in relation to the work described in the present article.

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