



DEVELOPMENT AND VALIDATION OF A NEW TOOL TO ASSESS KNOWLEDGE, ATTITUDE, AND PRACTICE OF MIND MAPPING AMONG PHYSIOTHERAPY ACADEMICIANS

Physiotherapy

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ABSTRACT

Context: Mind mapping is an active teaching-learning technique that stimulates critical thinking. Physiotherapy academicians' views and perceptions about mind mapping are not extensively researched. Knowledge, Attitude and Practice (KAP) questionnaire would prove to be a useful tool to identify their baseline knowledge, attitude and behaviour in relation to mind mapping. This study attempts to bridge the research gap on a KAP questionnaire specific to mind mapping for Physiotherapy academicians. **Aim:** The present study aims to formulate and corroborate a KAP questionnaire about mind mapping among Physiotherapy academicians. **Settings And Design:** In this psychometric study, 495 Physiotherapy academicians from Physiotherapy institutions affiliated to State, Deemed and Private Universities across India participated between September 2022 to April 2023. **Methods:** A KAP questionnaire was formulated by following a standardised methodology comprising seeking of expert opinions, consultation with senior faculty, and a review of existing literature. The questionnaire was validated through a cross-sectional survey of 495 Physiotherapy academicians selected by convenience sampling. Validity was determined by face and content validity methods while Reliability was examined by the internal consistency method. Exploratory factor analysis was used to examine the construct validity. **Results:** Totally, 49 items categorised under Knowledge (12 items), Attitude (27 items), and Practice (10 items) constituted the KAP questionnaire. Independent Cronbach's Alpha was 0.83, 0.98 and 0.95 for the KAP domains, indicating strong internal consistency. The Content Validity Ratio and Content Validity Index were > 0.80 , signifying acceptable content validity, while the Intraclass Correlation Coefficient of 0.863 suggested good reliability of the questionnaire. Item factor loadings were reported to be > 0.4 with the extraction of eighteen common factors. **Conclusion:** The developed questionnaire exhibited good validity and reliability, providing a valuable tool to comprehend Physiotherapy teachers' KAP regarding mind mapping. This questionnaire can be used to analyse changes in learning and behaviour, following faculty training in mind mapping.

KEYWORDS

Attitude, Knowledge, Mind mapping, Physiotherapy academicians, Practice

INTRODUCTION:

Mind mapping is an active student-centric technique for cultivating learning. According to this theory, learning occurs through 'mental construction', where new information integrates into existing mental frameworks.^[1] The theory states that significant learning happens as students absorb novel information into their existing knowledge base.^[2,3] This integration constitutes meaningful learning among students. Mind maps were introduced by Tony Buzan in 1970s.^[4] A mind map is a non-linear and visual diagram featuring a central theme and branching sub-themes. The information about the central topic branches out hierarchically from central to peripheral using keywords for the sub-themes. The diagram uses different colours for different branches and uses pictures to enhance the ideas and concepts.^[5,6] Such colourful diagrams facilitate easy memorisation of information and are pleasing to read, thereby resulting in learners being more enthusiastic in classrooms.^[7]

Mind maps are demonstrated to have several uses in teaching and learning. Mind maps help in extracting important information from text and organising it in the form of key words. Mind maps help in easier summarisation and revision of study topics and facilitate a better planning of the study content.^[5] The mind map diagram facilitates analysis, memorisation and understanding of associations among key concepts which helps to promote higher order thinking skills, thus developing critical thinking.^[8] The ability to understand these associations can be useful to stimulate the thinking required in clinical practice. Applications of mind mapping can be used in problem-based learning, health promotion activities, formation of effective diagnosis and care planning.^[9] Mind maps are hypothesised as a valuable tool to help in clinical reasoning and decision-making to diagnose and manage medical conditions.^[10] This technique can be used effectively in higher education as mind maps accommodate diverse styles of learning among students,^[11] and assist educators in gauging students' comprehension levels on subjects.^[12] Considering its potential, this technique is increasingly gaining traction in various professional education courses, including healthcare, proving beneficial for both students and educators.

In the context of Physiotherapy education, critical thinking is an essential part of the patient diagnostic process^[13] as it enables students to explore problems deeply for gaining a comprehensive understanding and contributes significantly to the processes of

problem solving and decision-making. Critical thinking has been identified as one of the seven factors in a model developed for professional behaviour in physical therapy students.^[14] However, previously published literature has shown a lack of development of critical thinking in Physiotherapy students.^[15-18] Mind mapping strategy can foster an environment that encourages critical thinking in Physiotherapy students and help them achieve excellence in both theoretical knowledge and clinical practice because this teaching – learning technique encourages learners to think logically, analyze complex information, and make associations between concepts and ideas. Therefore, it is essential to equip Physiotherapy educators with the mind mapping approach.

However, application of mind mapping in the field of Physiotherapy education has demonstrated a paucity of literature. Physiotherapy teachers' opinions and perceptions about mind mapping may play significant influence in the adoption of this method in teaching. Furthermore, their insights can provide valuable feedback on the usefulness and limitations of using mind maps in teaching.^[19] It is also important to gauge the awareness, existing knowledge, prevailing attitudes, and current practices of mind mapping among Physiotherapy teachers to address factors contributing to limited awareness.

In their research, Mahsa Hariri and Abdorreza Tahriri (2013) noted that there are very few publications that have evaluated only the attitude of learners about mind mapping through use of questionnaires.^[20] However, a comprehensive tool to assess the awareness, perception, and actual practices of mind mapping among Physiotherapy academicians is not yet developed. Also, no study estimating the reliability and validity of a KAP tool for mind mapping has been identified in the review of literature. The necessity of developing a comprehensive KAP tool for mind mapping among Physiotherapy academicians can be explained with regards to the following:

1. Such an instrument could serve as a valuable tool in assessing behaviours, beliefs, attitudes, misconceptions, and baseline knowledge about mind mapping among these professionals. This would help to analyse the factors leading to limited awareness about mind mapping among Physiotherapy teaching faculty, thereby facilitating targeted interventions.

2. Post – intervention changes in learning and behaviour following mind mapping training among Physiotherapy academicians can be

analysed using this tool, as such an instrument does not exist, according to literature review. The primary advantage of using this tool on mind mapping would be its ability to assess multiple domains comprehensively within a single questionnaire, gathering opinions from large number of Physiotherapy academicians across different geographical areas.

In view of the above – mentioned reasoning, the present study was planned with the aim of formulating an instrument specifically designed for evaluating the Knowledge, Attitude, and Practices related to mind mapping among Physiotherapy academicians and assessing its psychometric properties.

MATERIAL AND METHODS:

Design and setting(s)

In this study, a questionnaire to assess knowledge, attitude and practices of mind mapping for Physiotherapy academicians was developed and psychometrically analysed. Established protocol was followed for developing and validating the questionnaire. The guidelines comprised three steps for questionnaire development, such as a comprehensive review of literature, consultations with experts and senior faculty, generation of items, categorisation of items into different domains. This was followed by validation of face and content by experts, assessment of construct validity and reliability and pre-testing of the questionnaire.^[21] The developed questionnaire was psychometrically assessed in Physiotherapy academicians from various health science universities in India, through a cross – sectional study design. The study received approval from the Institutional Ethics Committee of Academic Research Projects, and all participating individuals provided informed consent in writing.

Tool Development

Questionnaire was developed in three steps as follows:

Literature Review

An exhaustive literature review was undertaken to identify items to be included in the questionnaire. Search engines, such as PubMed, Google Scholar, ProQuest, ERIC, Science Direct, Cochrane library database, PEDro, Wiley Online library and CNKI, were utilised for literature search. Search terms such as 'mind maps,' 'mind mapping,' 'education,' 'medical education,' 'health professions education,' 'physical therapy education,' 'physiotherapy,' 'perceptions,' 'knowledge,' 'attitude,' and 'practices' were employed to identify relevant articles related to mind mapping in education. Varying forms of these terms were identified by using database-specific truncation symbols. Combined Boolean operators ('AND' for terms such as 'mind maps,' 'medical education,' 'India,' and 'OR' for terms like 'education,' 'medical education,' 'physical therapy education,' 'health professions education') for selecting articles on mind mapping in health education. In addition, relevant studies were identified through manual screening of back-references of selected articles. Both quantitative (e.g., randomised and non-randomised controlled trials, single-group pre-post interventional studies) and qualitative studies (e.g., semi-structured interviews, focus group discussions, case series, and case studies) assessing perceptions and the use of mind mapping in education were included in the literature search. The review included publications up to the search date and was limited to articles published in English. An item pool was formed based on the literature review by drawing items from existing questionnaires and by identifying relevant articles.

Consultation with experts and senior faculty from Physiotherapy Literature review was followed by discussion of the item pool with five senior faculty at the Professor level from Physiotherapy institutions in Mumbai city, India through interview method. The responses obtained were collected and analysed. This process further contributed to the addition of questionnaire items.

Item Generation

The collected item pool was then sorted out under three domains, namely, 'Knowledge', 'Attitude', and 'Practice'. Items were drafted in simple English language to avoid confusing statements and double negatives. Dichotomous 'Yes' and 'No' responses were used for knowledge-related items, while most of attitude-related items were assessed through a 5-point Likert scale (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree). A few attitude items were assessed using close – ended multiple choice responses. A mix of dichotomous 'Yes' and 'No' responses and close – ended options were

used for practice – related items. The questionnaire was labelled as Version I.

Validation Of The Tool

Face Validity

The developed questionnaire was evaluated by a panel of seven experts, comprising two senior and two junior faculties from the Department of Physiotherapy, two senior faculties at the Professor level representing the Departments of Community Medicine and Surgery, and one distinguished expert in mind mapping from an International University. The objective of the study and the questionnaire was shared with each panel member, and they were requested to analyse every questionnaire item and offer feedback on its appropriateness, relevance, simplicity and transparency during the first evaluation round. Based on their feedback, modifications were applied to refine the questionnaire, resulting in Version II.

Content Validity

Version II of the questionnaire underwent another evaluation by the expert panel members. The experts were asked to determine the necessity/ importance of each item using a three – point Likert scale of 1 – "Not necessary", 2 – "Useful but not essential", 3 – "Essential" while relevance was assessed using a four – point Likert scale of 1 – "Not relevant", 2 – "Item needs major revision", 3 – "Item needs minor revision", 4 – "Very relevant". Clarity of the items was assessed with a four – point Likert scale where 1 – "Not clear", 2 – "Item needs major revision", 3 – "Clear but needs minor revision", 4 – "Very clear".^[22] Further adjustments were made to enhance the items' quality, based on the feedback given by the experts, following which Content Validity Index (CVI) and Content Validity Ratio (CVR) were determined for every item. CVR was determined using the Lawshe Formula which is $CVR = (Ne - N/2) / (N/2)$ where Ne represents the number of experts marked as 'essential,' and N denotes the total number of experts.^[23] Item – CVI was expressed as the number of experts rating 3 or 4 for the relevance of an item divided by the total number of experts.^[22] Item would be considered appropriate if, the content validity index was 80% or higher.^[24]

Data Collection Methods

Construct Validity

A cross – sectional study design was adopted for assessing construct validity of the questionnaire. All participants were full – time teaching faculty from Physiotherapy institutions affiliated to State, Deemed and Private Universities across India. All of them were actively involved in the academic program of Physiotherapy in their respective institutions. Faculty was recruited by the Principal Investigator of the study through electronic media like email and WhatsApp. Convenience sampling method was used to recruit participants for the study. A list of Physiotherapy academicians was prepared through information obtained from institutional websites. They were contacted by email with a link to the e – questionnaire and Informed Consent Document, explaining about the study, and a request to participate in the study. A written consent was obtained from the participants before obtaining their responses. Participation was voluntary. The sample size for exploratory factor analysis was established at 10 participants for each item.^[25] Since, the tool had 49 items, sample size of 490 was required. The questionnaire was administered to 600 full-time Physiotherapy teaching faculty from state-affiliated, Deemed, and private universities across India. A reminder email was sent once a week for three weeks. A total of 495 subjects participated in the study.

Inter – rater Reliability

The questionnaire was administered to 20 full-time active teaching faculties from various Physiotherapy academic institutions across the country. The participants were instructed to provide their responses to the questionnaire twice, with a 15-day interval between the two. The collected responses were statistically analysed to assess the tool's reliability. Internal consistency of the tool was determined by Cronbach's alpha coefficient.

Pre-testing Of The Final Draft Of The Questionnaire

The final version of the questionnaire was pre-tested on 15 full-time Physiotherapy teachers to ensure clarity and precision in the interpretation of the developed questions. The participants were asked to respond to the questionnaire and provide their feedback and inputs, based on which the questionnaire was modified accordingly.

Data Analysis:

IBM SPSS Statistics (Windows Version 23.0) (IBM Corp. Released

2015) was used for analysing the collected data. Demographic characteristics of participants were outlined through descriptive statistics. CVI and CVR were used to assess content validity of the questionnaire and the domains. Inter - rater reliability was determined through Intraclass Correlation Coefficient and internal consistency of the tool was determined by Independent Cronbach's Alpha. The proposed domain structure and its sub structure were assessed, and construct validity was evaluated by using exploratory factor analysis with varimax rotation.

RESULTS:

Development Of The Tool:

The development of the KAP questionnaire began with an extensive literature search using specific keywords, resulting in 79 articles. After examination, 37 papers were found to be pertinent to the research. Seven review papers on mind mapping, eleven qualitative exploratory investigations with semi-structured interviews, and six research papers utilizing a quantitative, questionnaire-based methodology were among the chosen publications. Thirteen research papers using a mixed method approach provided detailed information for formulating the item pool of the instrument.

The relevant full – text papers were studied and an item pool of 53 questions was generated for the questionnaire. The questions were segregated into the three domains of Knowledge, Attitude, and Practice, resulting in the formation of Version I. Based on the experts' feedback, four items were added, eight items were deleted, and nine items were modified, resulting in the questionnaire being refined as Version II, totally containing 49 items.

Table 1 presents the detailed process of questionnaire development and validation.

Table 1 - Stages Of Development And Validation Of The Questionnaire.

Steps	Nature of activity	Methods	Number of domains	Number of items	Break up of items	Addition/ subtraction of items
I	Development of construct	Literature review	Nil	53	--	Nil
II	Item generation	Development of items	3	53	K - 9, A - 30, P - 14	Nil
III	Face validity	Expert opinion by 7 experts	3	49	K - 12, A - 27, P - 10	8 items deleted, 4 items added, 9 items modified
IV	Establishment of content validity	Expert validation by scoring every item on its importance, relevance, and clarity	3	49	K - 12, A - 27, P - 10	No change
V	Establishment of intratester reliability	Responses obtained from 20 participants on two occasions two weeks apart	3	49	K - 12, A - 27, P - 10	No change
VI	Pre - testing	Responses obtained from 15 participants	3	49	K - 12, A - 27, P - 10	Minor changes made
VII	Establishment of construct validity	Cross - sectional survey obtained on 185 participants	3	49	K - 12, A - 27, P - 10	--

Abbreviations: K, Knowledge; A, Attitude; P, Practice

Validation of the tool:

Table 2 depicts the demographic characteristics of participants. Out of the 600 participants contacted for construct validity, 495 responded with the total response rate of 82.5% (mean age, 33.97 years; SD, 6.77).

Table 2 - Demographic Variables Of Participants

Variables	Number of respondents (N)	Percentage (%)
Gender		
Females	379	76.6
Males	116	23.4
Institutional designation		
Principal	36	7.3
Professor	43	8.6
Associate Professor	121	24.4
Assistant Professor	258	52.1
Lecturer	37	7.5
Teaching experience		
Less than 5 years	213	43.0
5 to 10 years	139	28.1
More than 10 up to 20 years	122	24.6
More than 20 years	21	4.2
Institutional affiliation		
State University	344	69.4
Deemed – to – be University	105	21.2
Private University	46	9.2
Courses taught		
Bachelor of Physiotherapy	472	58.4
Master of Physiotherapy	305	37.7
Doctorate in Physiotherapy	30	3.7

Face Validity:

Items in the tool were evaluated by the panel of seven experts and stem of six items were modified in vocabulary to increase the simplicity of the items. Options provided for three items were revised.

Content Validity:

Content Validity Index (CVI) calculated for all items was greater than 0.79, hence all items were retained in the tool. Strong content validity was established for the questionnaire items due to the Average Item Content Validity Index (I-CVI) being 0.8182. In addition, content validity was found to be excellent due to the Scale Content Validity Index (S-CVI) being 0.833. CVR value obtained was > 0.99 for all items, hence all items were retained in the tool.

Inter – rater reliability and internal consistency:

Instrument reliability was assessed by the Intraclass Correlation Coefficient (ICC) and Cronbach's alpha values. ICC was calculated to be 0.863 for the entire tool, which indicated a good stability of the questionnaire. Furthermore, the independent Cronbach's Alpha values for the whole questionnaire was 0.923. These results demonstrated a strong internal consistency within the questionnaire. CVI, CVR and Independent Cronbach's alpha values for each domain of the questionnaire are shown in table 3.

Table 3 - Content Validity Index, Content Validity Ratio And Reliability Of The Questionnaire Domains

Domains	Average CVI values†	Average CVR values††	Cronbach's alpha coefficients
Knowledge	0.82	1.000	0.839
Attitude	0.83	0.989	0.980
Practice	0.84	1.000	0.951

†CVI for all items should be > 0.79, for retaining the item in the tool.

††CVR for all items should be minimum 0.99 when tool is evaluated by seven experts, according to Lawshe table

Construct Validity:

Exploratory factor analysis was done to investigate the suitable construct of the tool.

Kaiser Meyer-

Olkin (KMO) measure of sampling adequacy and the Bartlett test of sphericity were performed before factor analysis, to confirm that the data obtained from Physiotherapy academicians was suitable for

conducting factor analysis. In the present study, the KMO value was 0.972 and the Bartlett test of sphericity was significant (Chi-squared 22289.304, $df = 1176$; P value = .000). Hence, factor analysis could be conducted on this data.

Exploratory Factor Analysis -

Exploratory factor analysis using Varimax rotation with Kaiser Normalization was applied to examine the domain structure of the 49 items. Factor loading was found to be more than 0.4 for most of the items, ranging from 0.414 to 0.879. Since Eigenvalues were greater than 1, a total of eighteen common factors were extracted from all three domains (five from knowledge, ten from attitude and three from practice domain). Table 4 illustrates the explored factors with factor characteristic value and cumulative contribution rate.

Table 4 - Factor Characteristic Value And Variance Contribution Rate

Factors	Charac teristics	Variance Contribu tion (%)	Cumulative Contribution (%)
Knowledge domain			
1 – Awareness about technique of mind mapping (related to mind mapping method)	2.264	17.419	17.419
2 – Information about mind mapping through workshops	1.380	10.614	28.033
3 – Awareness about mind mapping as an active teaching – learning strategy	1.300	9.997	38.030
4 – Sources of information about mind mapping through published studies and peer information	1.264	9.727	47.757
5 – Awareness about training related to mind mapping among healthcare professionals	1.088	8.371	56.127
Attitude domain			
1 – Perceived usefulness of mind mapping	8.820	20.511	20.511
2 – Utilization of mind mapping in teaching schedule	3.391	7.885	28.396
3 – Perceived useful method of mind mapping	2.240	5.210	33.606
4 – Perceived usefulness of repeated practice of mind mapping	1.847	4.295	37.901
5 – Perception about challenges in mind map creation	1.723	4.007	41.908
6 – Reviewing mind maps with students during classroom teaching	1.603	3.729	45.637
7 – Perceived useful technique of mind mapping in teaching (related to the technique of paper and digital mind maps)	1.498	3.483	49.120
8 – Areas of likely difficulties in creating mind maps (related to difficulty in classifying concepts in mind maps, technique getting monotonous, difficulty in working alone on mind maps)	1.390	3.233	52.354
9 – Difficulty in creating mind maps (related to lack of good drawing skills)	1.379	3.208	55.561
10 – Perceived barriers for implementing mind mapping in teaching	1.252	2.911	58.472
Practice domain			
1 – Usage of mind mapping for classroom teaching (related to revision of concepts and understanding topic before didactic lecture)	1.952	24.398	24.398
2 – Usage of mind mapping for other non-didactic forms of teaching	1.463	18.289	42.686

3 – Technique of mind mapping (related to developing mind maps after classroom lecture)	1.313	16.419	59.105
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DISCUSSION:

The present study was conducted with the aim of developing a new tool for assessing knowledge, attitude and practices of mind mapping technique among Physiotherapy academicians and for evaluating its psychometric properties. A total of 49 items were developed in the tool with 12 items focussing on the knowledge, 27 items directed towards the attitudes and 10 items focussed on the academicians' behaviours and practices regarding mind mapping in their teaching schedule. A panel of seven experts reviewed and revised a few items. Content validity was assessed using CVR and CVI. Average CVR value was greater than 0.9 for each domain of the tool. According to the Lawshe table described in a study by Zerati, et al (2014), the obtained CVR value was adequate to retain the items in the tool, as the tool was validated by a panel of seven experts.^[26] CVI was found to be more than 0.80, hence acceptable for new instruments, as proposed by Davis et al (1992).^[24]

For a newly developed instrument, the test – retest reliability needs to be more than 0.7.^[27] In our study, the retest correlation coefficient was 0.863, indicating a good stability of the tool. Inter – rater reliability was acceptable for all domains of the instrument. Furthermore, Independent Cronbach's Alpha values for the whole questionnaire was 0.923. This indicated strong internal consistency of the tool, according to a study by Taber K.S. (2018) in which Cronbach's alpha values were described as strong if they fell between 0.91 and 0.93.^[28]

In exploratory factor analysis, eighteen common factors were extracted. Since, the corresponding factor loading of items was more than 0.4, it was evident that the items in the common factor distribution adhered to the questionnaire's theoretical formulation. A factor is generally considered acceptable and the relationship between the item and factor significant if the cumulative contribution rate is greater than 40% and each item on the associated factor has sufficient loading of > 0.4.^[29] In our study, the item (Should mind mapping be included as an adjunct to classroom teaching?) from 'Attitude' domain had the lowest acceptable factor loading of 0.414.

The twelve 'Knowledge – related' items in the created tool were centered upon the core ideas of mind mapping. In a review paper, Choudhari et al. (2018) outlined the mind mapping framework, fundamental principles, and applications in health education.^[30] These elements were taken into account while creating the items for the knowledge analysis on the mind mapping technique's guiding principles and application in the education of health professionals. A total of twenty-seven items were created under the "Attitude" section to assess teachers' opinions regarding the use of mind mapping in the classroom. Arulselvi (2017) has detailed the apparent advantages of mind mapping in another review paper. These benefits include analysis, memory, revision of study subjects, and comprehension of links between important concepts.^[31] These components were included while creating items to gauge academicians' sentiments about mind mapping. Ten items in the tool that was created assessed the behaviours and methods used by Physiotherapy educators to use mind mapping into their lesson plans. In their study, Zipp et al. (2013) detailed how faculty members used and evaluated mind maps created by students.^[32] When creating the "Practice" linked mind mapping elements, these considerations were taken into account.

Previous studies on mind mapping have primarily used qualitative methods for gathering opinions about the usefulness of mind mapping. For example, Keles (2012) used interviews to analyse the views and perspectives of 24 elementary science and technology teachers regarding the implementation of mind mapping. Positive feedback was found on its enhancement of instructional quality, lesson planning and evaluation, and lecture engagement.^[19] Şeyihoğlu and Kartal (2010) studied the perceptions of 20 primary education teachers regarding the use of mind mapping in teaching, through semi-structured interviews,^[33] and highlighted the benefits of mind mapping in teaching. However, these studies were limited in their scope, focusing on a small subset of population. Also, the current state of knowledge, prevalent attitudes, and usage practices of mind mapping among Physiotherapy academicians in their teaching techniques are not yet fully analyzed by previous qualitative research. Hence, the present study is unique as it is the first attempt to develop a novel KAP assessment tool for mind mapping among Physiotherapy teaching faculty.

Strengths Of The Questionnaire

The developed questionnaire comprehensively evaluates Knowledge, Attitude and Practices regarding mind mapping across Physiotherapy teaching faculty. It can be used to analyse the factors leading to limited awareness about mind mapping among Physiotherapy teaching faculty, thereby facilitating targeted interventions. In addition, this questionnaire can be used for assessing changes in awareness and perceptions among Physiotherapy faculty after receiving mind mapping training.

Limitations of the questionnaire

This questionnaire has a few limitations. The questionnaire is quantitative in nature; hence, it may not be able to capture the in-depth perspectives and opinions of respondents. Due to the questionnaire being a self-administered one, the respondents could have provided less than truthful responses. Despite efforts to maintain simplicity and clarity in the questions and to minimise response bias, some questions could inherently suggest specific responses.

CONCLUSION:

The present study introduces a novel tool for assessing the existing knowledge, prevailing attitudes, and current practices adopted by Physiotherapy academicians regarding the usage of mind mapping technique in teaching and learning. This tool demonstrates good inter-rater reliability and strong internal consistency. The new KAP instrument for mind mapping would help to shed light on the perceived advantages and barriers of this educational technique among Physiotherapy academicians. Furthermore, this tool can be used to evaluate change in knowledge and learning of Physiotherapy academicians following introduction of mind mapping training and to assess their actual change in behaviour around the use of mind mapping, using Kirkpatrick Level 2 and 3 evaluations.

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Conflict Of Interest:

There are no conflicts of interest declared in the above study, for each author.

Ethical Approval:

Institutional Ethics Committee for Academic Research Projects of Topiwala National Medical College and BYL Nair Hospital, Mumbai, Maharashtra, India. (Ethics Code: ECARP/2022/63, dated 26th August 2022).

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