Strides Dev Med Educ. 2026 February; 23(1):e1646. doi 10.22062/sdme.2026.201682.1646

Review Article

Tools for Assessment of Teamwork Skills of Health Professions Teachers: A Scoping Review

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Received: 2025 September 04
Revised: 2025 December 30
Accepted: 2026 February 07
Published online: 2026 February 17

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Citation:
Kirmani F, Sarfaraz S, Kauser Ali S. Tools for Assessment of Teamwork Skills of Health Professions Teachers: A Scoping Review. Strides Dev Med Educ. 2026 February; 23(1):e1646. doi:10.22062/sdme.2026.201682.1646

Abstract

Background: Teamwork skills are crucial in HPE for fostering effective teaching and learning environments. While several tools assess teamwork in various educational settings, few are designed to assess the teamwork skills of educators within HPE.

Objectives: This scoping review aimed to identify and map tools used to assess teamwork skills among teachers in Health Professions Education (HPE), with a focus on the tools' characteristics, including assessed domains and applicability in academic settings.

Methods: A scoping review was conducted following Arksey and O'Malley's framework, updated by Levac et al. We searched Google Scholar, PubMed, and PakMedinet for studies using tools to assess teamwork in academic or clinical settings. Inclusion criteria focused on studies that mapped the characteristics and domains of teamwork tools. Data were charted and summarised to highlight their applicability in educational settings.

Results: Thirteen studies met the inclusion criteria. One tool, TeamQ, was designed for clinical teaching teams, while others were aimed at students, interprofessional teams, or general academic settings. Commonly assessed domains included communication, leadership, collaboration, and problem-solving. Most tools were self-assessment-based and showed varied applicability across educational contexts.

Conclusion: This review identifies several tools for assessing teamwork in educational contexts. However, there is a significant gap in tools designed specifically for assessing the teamwork skills of HPE educators. Future research should focus on developing such tools to measure teamwork behaviours in academic settings.

Keywords: Assessment Tools; Faculty Development; Health Professions Education; Teamwork Skills; Teacher Evaluation

Background

In today's rapidly evolving world, characterised by advanced technology, increased interconnectedness, and growing workplace complexity, teamwork has become an indispensable component for success in any field. In Health Professions Education (HPE), the importance of teamwork extends beyond clinical care to include the educational processes involved in training the future health professionals (1). Studies in academic and healthcare settings have consistently demonstrated the positive impact of teamwork on patient outcomes, error reduction and the development of supportive learning environments (2, 3). As interdisciplinary and team-based work environments become increasingly common, the role of teachers in modelling and fostering effective teamwork has gained importance (4).

Among the general competencies proposed for healthcare settings, teamwork is widely recognised as a key non-technical skill essential for enhancing communication, problem-solving, decision-making, and overall performance. Professional bodies and international organisations, such as the WHO, have emphasised the integration of teamwork into both clinical and educational contexts (5). Moreover, health professions curricula are increasingly placing more emphasis on collaborative learning models such as team-based learning and inter-professional education, where facilitation and participation in teamwork is central to effective teaching practice (4).

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Thus, teachers should themselves be competent at teamwork to role model required behaviours, give students the support they need, help them develop positive relationships with colleagues, and assist in developing team-based models of care (6). Identifying, nurturing, and evaluating these competencies in health professions educators are, therefore, crucial to preserving the quality and impact of education and care, underscoring the need for assessment of their teamwork skills.

Various professional fields have successfully developed and tested instruments to measure teamwork competencies (7). However, despite the growing recognition of teamwork as an essential competency, there is a lack of comprehensive guides on the tools available for assessing teamwork skills, specifically in HPE teachers. Although several tools exist to measure teamwork competencies, these tools differ in format, scope and applicability, making it challenging for teachers and administrators to choose an appropriate assessment tool.

Objectives

To address this gap, the present study conducts a scoping review of existing tools used to measure teamwork skills among teachers of health professions education. By systematically mapping existing instruments and summarising their key characteristics, we aim to provide a comprehensive guide for educators, researchers, and institutional administrators seeking to enhance teamwork skills in educational settings. This scoping review specifically addresses the following questions:

- What tools are available for assessing teamwork skills among teachers of health professions education?
- What are the key characteristics of these tools, including the teamwork domains assessed, target population, and context of use in academic settings?

Methods

Study Design: We conducted a scoping review in accordance with Arksey and O'Malley's framework (8), updated by Levac et al. (9), and reported the findings in line with the PRISMA-ScR guidelines for scoping review (10). The framework is particularly suitable for mapping the breadth of existing literature and understanding the range of tools and methodologies available for assessing teamwork skills in health professional educators. The purpose of this scoping review was to map and summarise the characteristics of tools used to assess teamwork skills among HPE teachers. A scoping study approach was adopted due to the broad nature of the research question and the wide variety of study designs involved.

The following five stages of scoping review, which Arksey and O'Malley's framework (8) suggested, were followed:

Stage 1: Identifying the research questions/aims

Stage 2: Identifying relevant studies

Stage 3: Study selection

Stage 4: Charting the data

Stage 5: Collating, summarizing and reporting the results

The optional expert consultation, which is the sixth stage suggested by Levac et al. (9), was not undertaken as the co-authors of this study are experienced medical education researchers and adequately fulfilled this role (11).

Stage 1: Identifying the research questions

We developed the research questions for this scoping review to guide the mapping and summarising of available tools for assessing teamwork skills in teachers of Health Professions Education (HPE). These questions were designed to identify tools, summarise their characteristics, and understand the contexts in which they are applied. The research questions, as presented in the Introduction, focus on:

1. Identifying available tools for assessing teamwork skills in HPE educators.
2. Examining the key characteristics of these tools, including the teamwork domains assessed, target population, and context of use in academic settings.

Stage 2: Identifying relevant studies

An extensive review of related articles was performed in Google Scholar, PubMed, and PakMedinet electronic databases up to January 2025. The search was conducted in English and included no date limitations to identify as many relevant studies as possible. The search strategy was developed by the first author and the co-authors (medical education specialists). It was further refined to ensure the inclusion of studies relevant to our research question.

In order to increase the thoroughness of the search, we also sought further literature through grey literature sources such as Research Gate, university repositories for dissertations, and institutional reports. This enabled the inclusion of studies that may not have been published in a peer-reviewed journal. In addition, the snowballing technique was used by manually reviewing

the reference list of included studies for further relevant studies that were not retrieved in the database search.

The database-specific search strategies were developed using a combination of free-text keywords and MeSH (Medical Subject Headings) terms. The search was adapted for each database to maximise the retrieval of relevant studies. The main search terms used were "teamwork skills", "teachers", "health professions education", "assessment tools", and variations of these terms. Boolean operators (AND, OR, NOT) were used to combine the keywords. The detailed search strategy for each database is shown in Appendix 2 and 3.

Initially, the search was limited to tools that assess teamwork skills in teachers of health professions education. However, through this search strategy, only one teamwork skills assessment tool was identified, which was used to assess teamwork skills in teachers of health professions education. Given the limited availability of tools specifically designed to assess teamwork skills in teachers of health professions education, the scope was subsequently broadened to include tools applied in adjacent educational settings (e.g., students, interprofessional education, and non-HPE teachers and academic settings). This broadening enabled us to identify additional tools applicable to both HPE and non-HPE teaching in assessing teamwork skills. This approach is in coherence with the scoping review methodology, which prioritises breadth of coverage to identify gaps in the literature (9).

In order to increase the thoroughness of the search, we also sought further literature through grey literature sources such as Research Gate, university repositories for dissertations, and institutional reports. This enabled the inclusion of studies that may not have been published in a peer-reviewed journal. In addition, the reference list of included studies was manually reviewed for further relevant studies that were not retrieved in the database search.

Stage 3: Study selection

The studies were included or excluded based on the following criteria:

Inclusion

- Studies with a focus on tools assessing teamwork skills among teachers in the health professions, in both the academic and clinical teaching environments.
- Studies involving the use of teamwork assessment tools in HPE for non-teachers (e.g., students, Inter-professional education, etc.) and tools used in academic settings other than HPE.
- Studies that provided general characteristics of teamwork assessment tools, such as teamwork domains assessed, context of use, target population, and applicability in educational settings.

Exclusion

- Commentaries, conceptual papers, and conference proceedings.
- Non-peer-reviewed studies
- Studies in languages other than English.

After the search, studies were screened in two stages:

Phase 1: Title and abstract screening to exclude irrelevant studies. Articles unrelated to the assessment of teamwork skills in health professions education were excluded.

Phase 2: Full-text screening to confirm that the studies met the inclusion criteria. We included studies that focused on the mapping of available tools to measure teamwork skills in teachers of health professions education, with a particular emphasis on characteristics like domains, context, and applicability.

The selection was performed independently by two reviewers. Discrepancies were resolved through discussion between the reviewers. A PRISMA flow diagram was constructed to illustrate the selection of studies, as shown in Figure 1.

Stage 4: Charting the Data

Data were extracted from the included studies using a standardised data extraction sheet. We captured the following data: tool name, author, year of publication, country of origin, details of the target population and sample size, tool type (e.g., self-assessment, peer assessment, team assessment), domains of teamwork skills assessed, number of items, validated or not, and context of use in educational settings.

Two reviewers independently extracted data from all eligible studies, and discrepancies were resolved by consensus.

As recommended by Khalil et al. (12), the results are predominantly displayed in tables. Appendix 1 outlines the attributes of the teamwork skills assessment tools, comparison of their key characteristics, including the domains assessed and the contexts in which they are applied. In instances where a tool was employed across various studies, these studies are presented collectively.

Stage 5: Collating, summarizing and reporting the results

In this stage, we organised and summarised the data extracted from the included studies in a structured format in order to respond to the research questions of this scoping review.

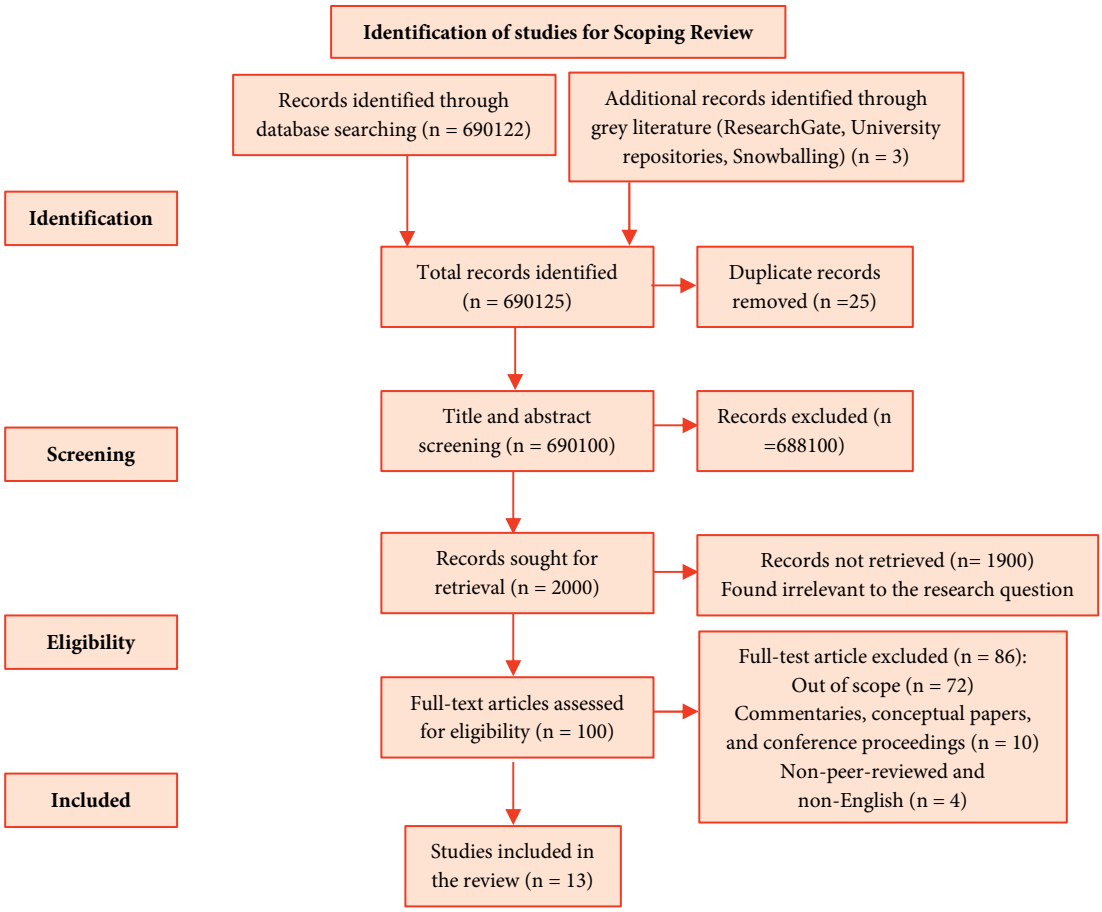

Figure 1. PRISMA flow diagram of the study selection for the scoping review

Collating the Data: Data were summarised systematically using tables to present the essential characteristics of each teamwork assessment tool. For each tool, the following information is provided: tool name, author(s), year of publication, country of origin, population examined (including sample size), domains of teamwork skills assessed, number of items in the tool, validation status, and context of use in educational settings. These descriptors were extracted during data charting and grouped into relevant categories, which also made convenient comparisons between tools in terms of dimensions.

Summarizing the Data: Following data extraction, we synthesised the summary of findings by considering the most salient features of each tool. This overview underscored the types of teamwork competencies measured by the tools, the populations to which they were applied, and whether the tools are validated or not. The summary process provided us with the opportunity to examine the field of teamwork skills assessment in health professions education, identifying trends, gaps, and common problems.

Reporting the Results: The findings were narratively presented in accordance with the review's research questions. Instruments were reviewed with regard to the dimensions of teamwork measured, their applicability across educational contexts, and the populations for which they were developed. The results were presented in the form of tables for easy comparison and better perception. The report ensured that results were transparent, structured, and provided unambiguous direction for educators, researchers, and decision-makers in health professions education.

Results

Search selection: The initial literature search, conducted in January 2025, identified 690,122 records across academic databases (Google Scholar, PubMed, etc.) and 3 records from a grey literature search (ResearchGate, University repositories, and snowballing). The search terms included variations and combinations of "teamwork skills, "teachers", "health professions education," and "assessment tools". After removing duplicates, 690,100 references remained. Title and abstract screening reduced the number of references

to 2000, and a further 1900 were eliminated as found irrelevant to the research questions, resulting in 100 articles for full-text screening. 86 studies were further excluded as out of scope, after applying the inclusion and exclusion criteria. This ultimately resulted in 13 studies being included. The PRISMA flowchart for the study is presented in Figure 1.

The regional location of the studies was primarily from North America, 53.8% (n = 7), followed by Europe, 23.1% (n = 3), East Asia, 15.4% (n = 2), and South Asia, 7.7% (n = 1). The first research article on teamwork skills assessment tools was written in 1992. The number of publications grew post-2018: 2 publications in 2018, 3 in 2019, 3 in 2020, and 5 in 2021 Appendix 1.

Most of the included studies were articles or innovations, 76.9% (n = 10), while 23.1% were perspectives (n = 3). 38.5% of studies targeted undergraduate medical education (UME) (n = 5), 23.1% graduate medical education (GME) (n = 3), and 15.4% continuing professional development (CPD) (n = 2). The remaining studies (23.1%, n = 3) were conducted across multiple levels of education (UME, GME, CPD).

Characteristics of the included tools: The 13 studies included in this scoping review employed various tools to evaluate teamwork skills in the field of health professions education and academic settings other than HPE. These tools assessed key teamwork domains such as communication, collaboration, leadership, and problem-solving, which are essential for effective teamwork in health professions education (13).

Variation across study populations was also evident, with some tools addressing students (68.4%, n = 9), teachers (23.1%, n = 3), and some interdisciplinary teams (8.5%, n = 1), as shown in Figure 2. Among the 13 tools, seven (53.8%) were used in HPE, and six (46.1%) were applied in academic settings outside HPE (Figure 3).

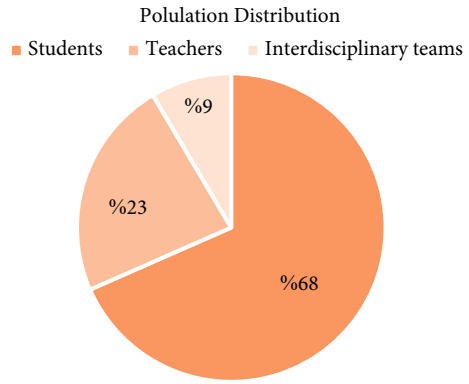

Figure 2. Distribution of populations being studied in the selected tools

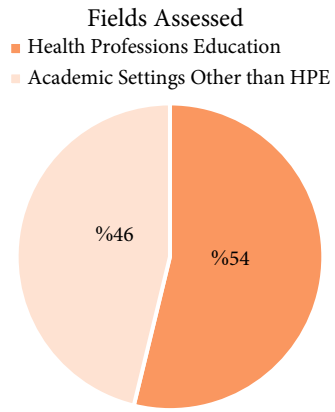

Figure 3. Fields assessed in the selected tools

The sample sizes in the included studies also varied, ranging from 303 to 1,351 participants. For example, the Comprehensive Assessment of Team-Member Effectiveness (CATME) (14) tool included 1,351 students across different academic years, and the Individual Teamwork Observation and Feedback Tool (iTOFT) (15) involved 108 students and 85 assessors.

These tools were mainly self-assessment tools (69.2%, n = 9), followed by team-based assessment (23.1%, n = 3), and peer assessment (15.4%, n = 2), as shown in Appendix 1. The Comprehensive Assessment of Team-Member Effectiveness (CATME) (14) and Teamwork Skills Questionnaire (TSQ) (16) were used as both self-assessment and peer-assessment tools.

The validation status of these tools also varied. Out of 13 tools assessed, 12 reported validity evidence, including well-known instruments such as CATME, TSQ, and T-TPQ. However, one tool, the Teamwork Baseline Assessment Tool (TBAT), did not provide any validity evidence.

Instruments such as TBAT (17) and TSQ (16) assessed skills related to teamwork behaviours and group goal setting. In general, the tools covered a broad range of teamwork domains, such as coordination, conflict resolution, and problem-solving, which indicates their applicability across different educational and professional settings. CATME (14) emphasised team contribution, task management, and interpersonal communication. TAS (18) focused on teamwork and task management in healthcare, based on shared-situation awareness, whereas iTOFT (15) addressed decision-making and patient safety.

The tools included in the review assessed a variety of domains related to teamwork skills. The most common domains among these tools are communication, collaboration, and leadership. TeamQ (19) and T-TPQ

(20) evaluated constructs such as team leadership, communication, and mutual support. A concise summary of the key features of the included teamwork assessment tools is presented in Table 1, while detailed tool characteristics are provided in Appendix 1.

Table 1. Summary of the key features of the included teamwork assessment tools

Key Features	Summary
Target population	Students (n=9), teachers (n=3), mixed (n=1)
Educational context	HPE (n=7), non-HPE academic settings (n=6)
Tool type	Self-assessment (n=9), team-based (n=3), peer assessment (n=2)
Common teamwork domains	Communication, collaboration, leadership, problem-solving
Validation status	Majority validated (13/14 tools); one tool unvalidated
HPE Teacher-specific tools	One tool (TeamQ) (20) is designed explicitly for HPE teachers.

Questionnaire content: The number of items of the teamwork assessment tools varied from 10 to 54, with most tools (69.2%, n = 9) consisting of 15 to 30 items. For example, TeamQ (19) had the most significant number of items (54 items) across a variety of teamwork domains. On the other hand, instruments such as TeamSTEPPS T-TPQ (20) and CATME (14) contain 35 items that address basic domains, for example, leadership and cooperation. These tools primarily focused on behaviours and team interactions, with only a few exploring more abstract domains, such as "team vision" and “belief in multidisciplinary patient care" (measured by TeamQ (19)).

Results of syntheses: This scoping review identified a variety of tools designed to assess teamwork skills, particularly in health professions education (HPE). The most commonly evaluated domains across the tools included communication, collaboration, leadership, and problem-solving. Notably, tools like CATME and T-TPQ focused on task-related competencies, such as decision-making, interpersonal communication, and coordination. In contrast, TeamQ incorporated more abstract constructs, including team vision and belief in multidisciplinary patient care, which are crucial for clinical teaching teams. However, a gap was identified in the availability of tools explicitly tailored for assessing teamwork in HPE teachers, as many tools focus on students or clinical teams, rather than teachers in academic settings.

Discussion

This scoping review aimed to identify tools that measure the teamwork skills of teachers working in Health Professions Education (HPE). Collaborative teamwork is increasingly recognised as a core competency in both healthcare and education, particularly within interprofessional education contexts (21-22). Successful teamwork in the educational setting, where teachers play a crucial role in promoting collaborative learning, can have a profoundly positive impact on student achievement and the preparation of future health professionals who will practice in teams in clinical settings (23). Although teamwork has been recognised as important in teaching settings and at the bedside, the results of our study show a severe underdevelopment of tools for measuring teamwork among teachers of HPE.

At the first stage of the search, instruments specifically evaluating teamwork skills in health professions education teachers were identified. However, the search identified only one validated instrument, TeamQ (19), which focuses on the teamwork skills of clinical teachers in teams, particularly those working with residents. This instrument, while suitable for clinical teaching environments, has a limited scope in non-clinical teaching situations, such as those involving educators in basic sciences or other theoretical disciplines of health professions education, like Health Management.

Realising the limited number of studies pertaining to teachers of HPE, the search was broadened to encompass instruments applied in broader academic settings, such as the evaluation of teamwork in students, inter-professional education, and teachers working in other educational programs. This broader search uncovered further tools that, although not developed explicitly for teachers of HPE, offered valuable insights into assessing teamwork skills in an educational context. Notable among these instruments were those measuring teamwork skills in interprofessional education (IPE) and among learners participating in team-based learning, such as the Teamwork Assessment Scale (TAS) (18) and the Comprehensive Assessment of Team-Member Effectiveness (CATME) (14). Importantly, although these tools were not originally developed for teachers of health professions education, their domains and constructs were interpreted in this review

specifically in relation to the teamwork demands faced by HPE educators.

The review revealed that the most frequently measured domains of teamwork in the included tools were communication, collaboration, leadership, and problem-solving. These domains are critical to clinical and educational settings, as effective collaborative teamwork can impact patient outcomes and learning in health professions education (24). The prominence of these domains aligns with the growing importance of interprofessional education (IPE) and collaborative learning within HPE curricula, in which working in teams is not only an essential skill to learn but also a behaviour that teachers must model (25, 26). However, tools such as CATME (14) and TeamSTEPPS T-TPQ (20), which primarily measure teamwork skills in clinical settings, may not fully encompass all domains of teamwork required for didactic settings. These tools are commonly used for measuring students' teams and do not directly address the collaboration and teamwork required by teachers in academic settings.

One of the areas found lacking in this review is that most of the tools focus on the perception of teamwork rather than on actual behaviours that should characterise these teams. Instruments such as the T-TPQ (20) or TeamQ (19) measure the perceptions of students or clinical teams regarding teamwork; however, they do not directly assess actual teamwork behaviours in educational settings. This is a substantial limitation, as tools relying exclusively on perception may not provide actionable findings to improve teamwork behaviours (27). For example, a teacher might believe they are an effective team player, but unless there is an objective way to measure actual collaborative behaviours, it is hard to determine what areas to work on for improvement. Thus, there is a clear need for tools that focus on assessing observable teamwork behaviours (e.g., collaborative planning, coordination, and problem-solving) rather than relying solely on subjective perceptions alone (28).

Overall, the findings of this scoping review indicate that, while numerous tools exist for measuring teamwork skills in health professions education, there is a notable gap in the literature for the tools designed for self-assessing teamwork skills among teachers of health professions education.

Implications for Research: Future research in Health Professions Education should prioritise the development of a teamwork skills assessment tool explicitly designed for HPE teachers, rather than adapting tools developed for students or clinical teams. Such instruments should focus both on self-assessment and observable teamwork behaviours relevant to academic and clinical teaching roles, including collaboration, coordination, and collective decision-making within teaching teams.

Establishing robust validity evidence will be essential, particularly content and construct validity grounded in HPE faculty expertise. Additionally, longitudinal research is needed to examine how teamwork assessment influences faculty development, students' educational outcomes, and educational culture within HPE institutions.

Implications for Practice: For Health Professions Education institutions, the findings of this review indicate that few tools are currently suitable for directly assessing teamwork skills among HPE teachers. In the absence of educator-specific instruments, existing teamwork assessment tools may be cautiously adapted for formative use within faculty development programs, interprofessional education initiatives, and team-based teaching environments.

These tools may be used diagnostically to support reflective discussions on teamwork competencies among teaching teams; however, institutions should avoid employing student-focused or clinically oriented instruments for high-stakes evaluation of teachers. Until validated, HPE teacher–specific tools are developed, teamwork skills assessment for teachers of HPE should be embedded within developmental, non-punitive frameworks that support professional growth, collaboration, and educational quality improvement.

Strengths and Limitations: One of the key strengths of this review is its comprehensive search strategy, which not only focused on tools for assessing teamwork in teachers of HPE but also expanded to include broader academic settings, including tools for students and interprofessional teams. This allowed for a more comprehensive understanding of the existing tools available to assess teamwork in HPE. Additionally, the inclusion of both published and grey literature helped ensure that the review captured a diverse range of tools and methodologies.

However, there are some limitations. While most included tools reported some validity evidence, this review did not critically appraise or synthesise the quality, type, or robustness of the psychometric properties. This was a deliberate methodological decision aligned with scoping review guidance, which prioritises mapping the extent and nature of available evidence rather than evaluating measurement quality. Consequently, conclusions regarding the comparative

psychometric strength of the identified tools cannot be drawn, and future systematic reviews using formal appraisal frameworks are warranted.

Additionally, the search was limited to three databases due to institutional access constraints, as this review was conducted as part of a thesis project. Although this approach aligns with scoping review methodology, future reviews should include databases such as Scopus, Web of Science, ERIC, and PsycINFO to enhance comprehensiveness. The exclusion of non-English language studies may have led to the omission of relevant tools developed outside of English-speaking regions. Further research should address this gap by ensuring that studies from non-English-speaking regions are included in future reviews.

Conclusion

In conclusion, we provide a thorough overview of the available tools for assessing teamwork skills in health professions education. While several tools are available for assessing teamwork skills in students, clinical settings, and IPE, there remains a significant gap in tools tailored specifically for teachers working in the academic environment of HPE. The findings suggest the need for further research to develop instruments that can measure both perceived and actual teamwork behaviours among teachers. Incorporating these tools into faculty development programs will enhance teamwork competencies and improve the overall quality of health professions education, ultimately benefiting both educators and students.

Acknowledgements: The authors used an AI-assisted language tool to support grammar and language refinement. The authors retain full responsibility for the content of this manuscript. No external colleagues, institutions, or funding sources contributed to the preparation of this scoping review.

Conflict of interests: There is no conflict of interest.

Ethical approval: It is a literature-based study; therefore, neither approval by the institutional review board nor the obtainment of informed consent is required.

Funding/Support: None.

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Appendix 1. Characteristics of the tools used in the included studies

Tool Name	Author	Country of origin	Target population & Sample size	Tool Type (Self, Peer, or Team assessment)	Domains of TWS assessed & Total No. of Items	Context of use
Teamwork Baseline Assessment Tool (TBAT)	Karunaratne N, et al.	Australia	• Students Sample size not mentioned	Self-Assessment	• Growth Mindsets • Reactions to Challenging Teamwork Scenarios • Ideal Team Player Attributes (being cooperative, proactive, and supportive) Total Items: 34 + 3 open-ended Questions	HPE
individual Teamwork Observation and Feedback Tool (iTOFT)	Thistlethwaite et al.	Developed by a consortium of seven universities from Australia, Canada, and the UK	• Students and novice health professionals • 108 students and 85 assessors	Self-Assessment	• Shared decision making • Working in a team • Leadership • Patient safety Total Items: 18	HPE (Interprofessional teams)
Teamwork Assessment Scale (TAS)	Kiesewetter & Fischer	Germany	• Students • 100	Team-Assessment	• Task-related Collaborative Behaviours • Team Adjustment Behaviours • Coordination • Collaboration • Information Exchange Total Items: 17	HPE (simulation-based-ward rounds)
TeamQ	Slootweg et al.	Netherlands	• Teachers • 929 clinical teachers from 114 teaching teams	Team-Assessment	• Team leadership • Team communication • Team task reflexivity • Team vision • Task orientation • Team mental model • Belief in multidisciplinary patient care teams for better outcomes • Residents' empowerment • Feedback culture • Decision-making • Engaging residents Total Items: 54	HPE (postgraduate training program)
TeamUP rubric	Hastie et al.	Australia	• Students • 8 midwifery focus groups • 14 health and business focus groups	Self-Assessment	• Fostering a Team Climate • Project Planning • Facilitating Teams • Managing Conflict • Quality Individual Contribution Total Items: 35	HPE + business academics

TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ)	Battles & King	USA	• Military and civilian healthcare providers. • 495	Self-Assessment	• Leadership • Mutual Support • Situation Monitoring • Communication • Team Structure Total Items: 35	HPE (healthcare providers)
Comprehensive Assessment of Team-Member Effectiveness (CATME)	OHLAND	USA	• Students • 1,351	Both self and team, as peer assessment	• Contributing to the Team's Work • Interacting with Teammates • Keeping the Team on Track • Expecting Quality • Having Relevant Knowledge, Skills, and Abilities Total Items: 12	HPE (interprofessional program)
Teacher Collaboration Skills Scale' (TCSS)	Basık & Dayı	Turkey	• Teachers • 513	Team-Assessment	• Dialogue • Decision making • Action • Evaluation Total Items: 25	Non-HPE academic program (for special needs students)
Teamwork Skills Scale (TSS)	Romero-Díaz et al.	Spain	• Students • 2,722	Self-Assessment	• Teamwork Behavior • Teamwork Importance Rating • Teamwork capability perception Total Items: 10	Non-HPE academic program (Vocational training)
Teamwork Competency Scale (TCS)	Hebles et al.	Chile	• Students • 802	Self-Assessment	• Group goal setting • Planning and coordination • Conflict management • Problem-solving • Communication • Collective efficacy • Performance monitoring • Supportive behavior • Learning orientation Total Items: 30	Non-HPE academic program (undergraduate program)
Teamwork Skill Assessment	Varela & Mead	USA	• Students • 349	Self-Assessment	• Transition process • Action process • Interpersonal process Total Items: 35	Non-HPE academic program (Business)

Teamwork Skills Inventory (TSI)	Strom & Strom	USA	• Students • 303	Self-Assessment	• Attending to teamwork • Seeking and sharing information • Communicating with teammates • Thinking critically and creatively • Getting along with teammates Total Items: 25	Non-HPE academic program (high school and university)
Teamwork Skills Questionnaire (TSQ)	O'Neil et al.	USA	• Students • 615 students • Teachers • 202 teachers	Self-Assessment	• Communication • Coordination • Leadership • Decision • Making Adaptability • Interpersonal Skills Total items: 36	Non-HPE academic program (social sciences and school)

Appendix 2. Articles Found on Literature Search

Keywords/Search Term	Articles Found			Records Retrieved
	Google Scholar	PUBMED	PakMediNet	
Teamwork AND Teamwork Skills (Construct Search)	231,000	2,823	7	233,830
Teachers (Population Search)	338,000	41,788	388	338,388
Teachers of Health Professions Education (OR Medical Education) (Population Search)	17,800	12,149	41	29,990
Teamwork Skills Assessment Tool (OR Instrument OR Scale) (Instrument Search)	31,700	129	0	31,829
#1 AND # 2	22,100	78	0	22,178
#1 AND # 2 AND #3	16,800	7	0	16,807
#1 AND # 2 AND #3 AND #4	17,100	0	0	17,100
				690,122

Appendix 3. Articles Found on Literature Search

Source	Search approach	Limits applied	Records identified
Google Scholar (Research Gate, university repositories for dissertations, and institutional reports)	Same keyword combinations; first 200 results screened	Title/abstract screening only	1
Snowballing	Reference lists of included studies	Not applicable	2
TOTAL			3