The assessment of personal and professional identity development in an undergraduate medical curriculum: A scoping review protocol. [version 1; peer review: 2 approved with reservations]

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Abstract

Background: Over recent years there has been significant interest in the field of medical education in understanding how medical students develop their personal and professional identity as they transition through medical school and into their early career. Despite the growing amount of research that focuses on the best methods of incorporating this area into medical school curricula, there has been less focus on how to assess this construct and how it might be associated with student progression. Therefore, a scoping review is being undertaken to identify the various methods or tools currently being implemented to assess the development of personal and professional identity, including the concepts of professionalism, leadership and resilience, in medical education and outline an optimal assessment framework.

Methods: The proposed scoping review of the literature will be conducted under the guidance of the methodology of the Joanna Briggs Institute for scoping reviews across multiple electronic databases. Electronic database, reference list, and citation searching from the year 2000 will be undertaken. Peer reviewed publications involving assessment methods for personal and/or professional identity formation, professionalism, leadership, and resilience being utilised with direct-entry or graduate-entry medical students will be selected. The search strategy will remain dynamic and may be further refined.
delineated as necessary during the review process. All studies that meet this study's inclusion criteria will undergo thematic analysis. The overall findings of this analysis will be presented in a narrative format.

**Conclusion:** In this scoping review protocol, the current methods and tools for assessment of personal and/or professional identity formation, professionalism, leadership, and resilience will be identified and synthesised into a proposed assessment framework. The hope is that this framework will then serve as an aid to support the assessment of this multi-dimensional, complex construct.

**Keywords**
Personal and professional identity, leadership, resilience, assessment, scoping review, professionalism
Introduction

Over the past several decades, there have been substantial shifts in the approach to professionalism teaching within medical school curricula. As Cruess et al., highlighted in 2006, a significant proportion of medical students’ contact with professionalism pre-1990s was heavily reliant on the use of role modelling amongst willing physicians and clinical faculty versus involvement of a formal curriculum. During the mid-1990s there was a significant increase in the focus of research in medical education towards the explicit teaching of professionalism, especially following the formation of the American Board of Internal Medicine’s (ABIM) Project professionalism. This movement was propelled by studies demonstrating the link between unprofessional behaviour amongst medical students and later episodes of professional misconduct. Since that time substantial effort has been placed into trying to define the abstract concept of professionalism, the rationale being that once a construct has been defined (and further broken down into its component parts), it is easier to operationalise, enabling incorporation into a curriculum and, very importantly, the design of an assessment strategy.

A significant challenge for research in this area is that the multi-dimensionality of professionalism has made the formation of a consensus definition contextually very challenging. As a result, individual universities have been reliant on forming their own definitions and arranging an assessment framework to meet their needs. In 2009, Wilkinson et al., emphasised that the assessment of professionalism was being hampered by the varying definition attempts as this had prevented a clear breakdown of measurable elements. However, the assessment of professionalism is a continuously evolving field, and the various definitions proposed to date have led to the development of a multitude of types of assessment tools, though no single definitive method of assessing professionalism has been identified. General consensus has long been that the ability to properly assess professionalism requires a multi-faceted approach involving a variety of tools over the duration of training. Unfortunately, there is still no exemplar framework to demonstrate what this should entail, and it is again left up to individual medical schools to decide what best meets their curricular needs.

The publication of the Carnegie Foundation report in 2010 calling for reform of medical education heralded the recognition of the complex psychosocial development that medical students undergo as they transition through their medical education, leading to a major shift in the focus of research in this area towards professional identity formation (PIF). In 2018, Kalet et al., provided a short definition of PIF as the process of internalising a profession’s core values and beliefs. However, PIF is widely accepted as a dynamic process that is shaped by the beliefs and values of the individual as well as by the environment, including both the formal and informal ‘hidden’ curricula of medical education, healthcare delivery, and encompassing social and larger societal forces.

By better understanding this process of PIF, medical schools can design curricular content that promotes the development of professional identity formation, so that by graduation, medical students “think, act and feel like a physician”. Lewin et al., noted in 2019 that “the formation of a physician’s professional identity is a dynamic process shaped by and intertwined with the development of that person’s larger adult identity.” Or, as Cruess et al., previously highlighted in 2015, a medical student’s professional identity formation develops congruently with their personal identity, continuously reorganising into an increasingly complex persona. Thus, if we consider ‘personal identity’ to be how a person sees themselves or is seen by others in different contexts, then professional identity is an important subset of this construct, and they should be approached together in regard to curricular frameworks. Core elements of personal identity that contribute to an emerging professional identity as a doctor are personal resilience and leadership. Equally, medical professionalism is a core component of the emerging professional identity as a doctor. Thus, the formation of one’s personal and professional identity is an intricate process and the optimal methods of assessment for learning to enhance personal and professional identity development (PPID) are as yet unknown.

Previous research has shown that, in general, the mode of assessment of curricular content can have a significant impact on students’ involvement in the learning process – either increasing their engagement or leading to demotivation and disengagement. Work on understanding this influence has led to international recognition of the need to help students become self-directed, autonomous learners and the further categorisation of curricular assessments that can help them achieve this goal into ‘Assessment Of / For / As Learning’. Assessment ‘for’ and ‘as’ learning, often identified as formative assessment, facilitates empowerment of the learners, and allows them to critically evaluate their own learning and performance. By participating in these types of assessment practices, educators collaboratively help students develop more competence and confidence within an area or specialty; thus, impacting both their personal and professional identity formation.

Study aims and objectives

The aim of this scoping review is to identify the various methods or tools currently being implemented in medical education to assess the development of personal and/or professional identity formation, including the concepts of professionalism, leadership and resilience. Findings will inform the development of an optimal assessment framework.

This review will be guided by the following research questions:

1. What tools/modalities are currently being employed to assess Personal and/or Professional Identity Development, Professionalism, Resilience and/or Leadership with undergraduate or graduate-entry medical students?
2. How are these assessments spaced and paced? And does the method or frequency vary by the year of study?

3. Is the assessment tool being utilised a representation of assessment ‘of’, ‘for’ or ‘as’ learning?

Methods

The population, educational aspects, outcomes (PEO) tool for systematic reviewing in medical education was used to form the research question for this review:

- Population: medical students.
- Educational aspect: resilience, leadership, professionalism and personal and/or professional identity.
- Outcome: method or tool used in formative or summative assessment of personal and/or professional identity formation, professionalism, resilience, or leadership.

Methodological framework

The methodology for this scoping review was guided by direction from the Joanna Briggs Institute. The JBI Methodology will ensure appropriate review and data extraction.

Search strategy

To aid in this endeavour, an information specialist collaborated on formulating and running an optimal search strategy. The following general keywords have been identified for this review: medical education, medical students, assessment, personal identity, professional identity, professionalism, resilience, leadership, and assessment. An example of the search strategy used for Ovid MEDLINE® is presented in Table 1. It combines Medical Subject Headings (MeSH) and free text terms with Boolean operators. This will be appropriately adjusted to search through the other electronic databases listed below.

Electronic databases from different areas, such as education, psychology, and health care will be searched. Specifically, this review will explore: MEDLINE, EMBASE, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsychINFO, Education Resources Information Centre (ERIC), and Web of Science.

To maximise the results for ‘current’ assessment tools, a date restriction will be placed on the search, starting from 2000. In addition, all studies that are deemed eligible will have their reference lists explored for other relevant material not detected by the initial search. Five of the more prominent journals in medical education – Academic Medicine, Medical Education, Medical Teacher, Clinical Teacher, and BMC Medical Education – will be hand-searched for additional resources.

Citation searching via Google Scholar of several leading publications in this area of focus will also be undertaken to maximise the scope of the search. The search strategy will remain dynamic and may be further delineated as necessary during the review process.

Inclusion criteria

Studies of any design that have an available abstract written in the English language from 2000 until the end of 2021 will be considered for inclusion as long as the object of the study is the assessment of personal and/or professional identity formation, professionalism, resilience or leadership for students in an undergraduate or graduate medical programme before graduation. Peer-reviewed reviews, commentaries, or editorials from the same timeframe will also be considered for inclusion.

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<table>
<thead>
<tr>
<th>Search Terms</th>
<th>Number of Results</th>
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<tbody>
<tr>
<td>1 Professionalism.ti,ab. or exp Professionalism/</td>
<td>8464</td>
</tr>
<tr>
<td>2 (professional adj2 behavior$) OR (professional adj2 behaviour$)</td>
<td>1595</td>
</tr>
<tr>
<td>3 Resilience, Psychological/ or Resilience.ti,ab.</td>
<td>33794</td>
</tr>
<tr>
<td>4 Leadership.ti,ab. or Leadership/</td>
<td>68031</td>
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<tr>
<td>5 (professional adj2 identity) or (professional adj2 identities) or</td>
<td>4742</td>
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<td>(personal adj2 identity) or (personal adj2 identities) OR (identity adj2</td>
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<td>formation)</td>
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<td>6 1 OR 2 OR 3 OR 4 OR 5</td>
<td>114581</td>
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<tr>
<td>7 (education adj2 curriculum) OR (medical adj2 curriculum) OR</td>
<td>18907</td>
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<td>(medical adj2 curricula) OR (medical AND *Curriculum/)</td>
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<td>8 Assessment.mp.</td>
<td>1525968</td>
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<tr>
<td>9 6 AND 7 AND 8</td>
<td>230</td>
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<td>10 Limit 2000-2021</td>
<td>227</td>
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inclusion if the sole focus of discussion surrounds an individual tool or assessment method that is being considered or already integrated into the respective medical curriculum. If it is still unclear from the title and abstract whether the paper involves a specific assessment tool(s), the full text will be reviewed for inclusion against study inclusion criteria (included here in Table 2).

Exclusion criteria
Research involving assessment of personal and/or professional identity formation, professionalism, resilience or leadership amongst post-graduate trainees or residency programmes will be excluded. While the population of interest in this scoping review is medical students, if the assessment tool is employed in an interprofessional learning (IPL) environment with other healthcare professions, ex. Pharmacy, Physiotherapy, Physician Associate students, it will be included if the medical student population meets the inclusion criteria. Those studies not falling within the predetermined dates or not published in English will also be excluded.

Study selection
After completing the search, studies will be uploaded into EndNote X9, and any subsequent duplicates will be removed. Secondary analyses that offer only opinion of a proposed assessment tool will not be included unless the discussion involves potential modifications to the tool or issues with implementation within their respective institutions. In the instance that an author(s) discusses the same assessment method in more than one paper, published at different times, only the initial description of the method will be included unless there is evolving dialogue about different uses, populations, or implementation outcomes.

A primary reviewer (MCu) will be responsible for the initial title and abstract screening of results. A volunteer independent reviewer (KM) involved with another research project at the same institution will screen 50% of titles and abstracts found for concurrence. It is hoped that this process will allow a maximum number of relevant papers to be identified. Any potential discrepancies between reviewers will be decided amongst the research team whom all have expertise in the area of medical education. The progression of the search will be fully reported, and the final outcome will be displayed in a diagram consistent with the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-SCr)27. All studies identified for inclusion will then undergo data extraction and qualitative thematic analysis.

Full-text Review and Data extraction
One author (MCu) will read identified articles in depth and will extract all relevant data with guidance by the JBI-recommended approach26. Two additional reviewers from the research team (AH, MCr) will each independently extract data from 33% of papers identified. Any potential discrepancies between reviewers will be decided through consultation with the wider research team. Identifiable data points will be inserted into an electronic database created for this purpose and approved by the research team. The initial version of this database is included in Table 3 but is expected to be adapted as the data extraction process progresses. Aside from the usual demographic information (authors, year published, journal, etc), this study will also address the type of assessment tool being utilised, at what point in medical school it is being employed, use in an IPL setting, whether it is for formative or summative assessment, and if the method is a once-off trial or has been integrated into the set curriculum.

Table 2. Study eligibility criteria.

<table>
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<th>Inclusion criteria</th>
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<tr>
<td>Medical students</td>
<td>Non-medical students</td>
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<tr>
<td>Undergraduate / direct entry</td>
<td><em>Interprofessional learning situations are acceptable as long as medical students are involved</em></td>
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<tr>
<td>Graduate entry</td>
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<td>Any year of medical school before graduation</td>
<td>Post-graduate trainees</td>
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<tr>
<td>All research designs</td>
<td>Articles not published in English</td>
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<tr>
<td>All methods of assessing personal or professional identity formation, resilience or leadership</td>
<td>Papers published prior to 2000</td>
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<tr>
<td>Other formats of publication are accepted as long as there is discussion of an assessment tool and its implication</td>
<td>Multiple papers by the same author discussing the same method of assessment without use with a new population or modification of the tool being utilised</td>
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Data analysis
A narrative approach will be used to thematically synthesise the data extracted from all studies meeting the inclusion criteria28. As part of the initial summary, all data on the different
tools or methods being used to assess medical students’ professionalism, resilience, leadership, professional and/or personal identity formation will be outlined based on whether it is a method of assessment ‘for’ ‘of’ or ‘as’ learning. The overall findings of this analysis will be presented in a narrative format. Implications of the study’s findings for current practice and future research will be identified.

Discussion
In this scoping review, the current methods and tools for assessment of personal and/or professional identity formation, professionalism, leadership and resilience will be identified and synthesised into a proposed assessment framework. The hope is that this framework will then serve as an aid to support the assessment of this multi-dimensional, complex construct. Limitations of this review plus further practical implications and recommendations for further research will be explored in the discussion of the final research article.

Data availability
No data are associated with this article.

References


Table 3. Data extraction database categories.

| Publication Date | Author name(s) | Journal name | Article title | Country of origin | Type of article | Objective(s) of the paper | Format of Professionalism, Resilience or Leadership curriculum being delivered | Year(s) of study in which curriculum is being delivered | Delivered within an interprofessional learning environment | Type or method of assessment of PPID, resilience or leadership | Number of times assessment used | What % is collected or marked via e-portfolio | Does the assessment form part of the formative or summative evaluation of the student | Outcome from the use of the assessment tool/method | Categorised as assessment ‘Of’ ‘For’ or ‘As’ learning |
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PubMed Abstract

PubMed Abstract | Publisher Full Text

PubMed Abstract | Publisher Full Text

PubMed Abstract | Publisher Full Text

PubMed Abstract | Publisher Full Text

Publisher Full Text

PubMed Abstract | Publisher Full Text

16. Merton RK: Some Preliminaries to a Sociology of Medical Education. Harvard University Press, 1957.
Publisher Full Text

PubMed Abstract | Publisher Full Text

PubMed Abstract | Publisher Full Text | Free Full Text

Publisher Full Text

Reference Source

Publisher Full Text

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Publisher Full Text

Reference Source

PubMed Abstract | Publisher Full Text

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The topic of personal and professional identity formation among medical students is a perennial and worthwhile topic. This scoping review is proposing to 'identify the various methods or tools currently being implemented to assess the development of personal and professional identity, including concepts of professionalism, leadership, and resilience, in medical education and outcome on assessment framework.'

I agree overall with the need for this scoping review however, I do have some questions about search terms and research design of this scoping review that I would like the authors to reflect upon. These include:

1. From my reading, professional identity formation (PIF) work, though relatively new, is a vibrant field of enquiry. Since there is no agreed definition, or common theoretical framework for PIF, I wonder if it would not be important first to better understand the conceptual parameters of PIF before undertaking a scoping review of how it can be assessed in medical programmes. For instance, the authors stipulate that PIF is related to resilience and leadership, yet only 2 sources are referenced to substantiate this position (neither of which appear to be systematic reviews). It is possible that other elements or components could also be in play? One way forward might be to undertake a concept analysis of PIF first, so you can be sure that these two components are worthy as search terms. This work may already have been undertaken, if so, please seek it out and mention it in the background of the protocol.

2. Related to this, the protocol is interested in ‘personal and/or professional identity formation’ as its topic of enquiry, What does the proposal mean by personal identity formation? Is it values, beliefs, attitudes, behaviours, i.e. psychological components of identity or does this understanding of ‘personal’ also extend to an individual’s social identity - e.g. age, gender, social class, ethnicity etc - and how those factors influence professional identity formation? Intersectional analysis would indicate that our social identities also play a significant role in our personal and professional development. Can the authors reflect on this, and qualify or revise what they mean by ‘personal’?
3. Search strategy: Decolonisation work holds us to account for the inherent biases in academic knowledge production, including language and location bias, and how these biases reproduce power asymmetries in knowledge production that serve to perpetuate, both ideologically and in praxis, the belief that English language, western, Global North research is more valid and legitimate than research coming from other geographical locations or indigenous populations. This protocol extends this by choosing to limit the literature sure to well-known Anglo-American publications. I appreciate there may be logistical and practical reasons for this journal selection, nevertheless, it would be important to acknowledge these biases, in the first instance, and offer some commentary or discussion for how you might plan to mitigate against these risks, if possible.

**Is the rationale for, and objectives of, the study clearly described?**
Yes

**Is the study design appropriate for the research question?**
Partly

**Are sufficient details of the methods provided to allow replication by others?**
Yes

**Are the datasets clearly presented in a useable and accessible format?**
Not applicable

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** Sociology of professionalism, dental education, sociology of health and oral health.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Reviewer Report 07 February 2023

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Rebecca L. Volpe
Department of Humanities, Penn State College of Medicine, Hershey, PA, USA

This scoping review is sorely needed, and I am looking forward to reading the eventual manuscript! I have some concrete/minor feedback, and a couple more conceptual questions for
your consideration as you develop this review.

**Minor issues:**
- You might consider adding something about 'developing' or 'forming' in your keywords, as this change-over-time seems to be an essential component of the concept of professional identity formation.
- In my own work I was surprised to find how many manuscripts did not have an abstract. When the abstract is missing, will you screen the article based only on the title, or will you have a policy of obtaining the full text and skimming the full text to make your decision? Regardless of what you choose, it should be reported in the methods section.

**Conceptual questions:**
- I am concerned that you are mashing together too many discrete ideas. Most authors, myself included, think of professional identity formation as conceptually discrete from professionalism. They are certainly related, but I am not at all sure that the typical assessment question in the clerkships that asks faculty to indicate if the student "exhibited professionalism in their interactions with peers, patients, etc" will tell you anything about that students' PIF.

  Relatedly, since the students' personal identity is already part of PIF (if we conceive of PIF as the coming together of the student's personal identity and the cultures and values of medical practice), it seems to me that you are 'counting' personal identity twice in a way that may not be helpful.

- I see that in terms of personal identity, you identified in particular that leadership and resilience were of interest. How did you select these two attributes? Why not excellence? Humanism? Social consciousness? I am worried that in the selection of these two attributes, you may be unintentionally perpetuating a hidden curriculum in medicine about what being an excellent physician “looks like,” and that your choice of attributes might be informed by the (male dominated, white, cisgender, protestant, wealthy) not-often-discussed culture in medicine that tends to prioritize ways of being that ‘fit’ more easily with certain types of individuals. In other words, medical culture tends to more highly prize the excellent clinical leader who works many evenings and weekends as opposed to the excellent clinician-educator who has a more balance approach to work and home. The former is more likely to be in need of resilience, and more likely to be viewed as a leader. The former is also more likely to be a cisgender white male. If you find the argument that I’m making here unpersuasive, then I think at a minimum it will help your reader if you offer an explanation of how you came to select those two attributes.

Thank you for the opportunity to review this protocol. I look forward to reading your results.

**Is the rationale for, and objectives of, the study clearly described?**
Yes

**Is the study design appropriate for the research question?**
Yes

**Are sufficient details of the methods provided to allow replication by others?**
No

Are the datasets clearly presented in a useable and accessible format?
Not applicable

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Professional identity formation; underrepresented in medicine learners; educational outcomes in humanities

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.