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How Medical Students Learn Adolescent Medicine: An Explanatory Theory of Competency Development and Professional Identity Formation Running head : Learning Adolescent Medicine

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Abstract

Introduction

: Adolescent medicine remains largely peripheral to undergraduate medical education despite adolescents facing increasingly complex health challenges. Although educational needs are traditionally defined by institutions and experts, little is known about the learning needs perceived by medical students themselves. This study explored undergraduate medical students' learning needs in adolescent medicine and generated an explanatory theory grounded in their experiences.

Methods

We conducted a qualitative study inspired by constructivist Grounded Theory. Semi-structured interviews were conducted with 10 undergraduate medical students from a French medical school. Participants were recruited through theoretical sampling. Interviews were audio-recorded, transcribed verbatim, and analysed iteratively using the constant comparative method and successive cycles of initial, focused, and theoretical coding.

Results

Eight themes emerged and were organised into three interrelated categories: competency, learning through supervised clinical participation, and professional identity development. Students perceived adolescent medicine as occupying a marginal place within the undergraduate curriculum and described training focused predominantly on declarative knowledge. Competency emerged from the mobilisation of internal and external resources, including prior experiences, representations, role models, peers, and the clinical environment. However, opportunities to mobilise these resources through supervised participation in authentic clinical situations were limited. Students reported insufficient observation, feedback, and assessment, as well as uncertainty regarding their role in adolescent care. Adolescent medicine emerged as a particularly challenging context for professional identity development. The resulting theory suggests that competency acquires meaning through learning achieved via supervised clinical participation, which in turn contributes to professional identity development.

Conclusions

Medical students' learning needs in adolescent medicine extend beyond knowledge acquisition. The proposed theory highlights the dynamic interaction between competency, learning through supervised clinical participation, and professional identity development. It may inform the organisation of undergraduate medical education, particularly the educational role of clinical placements in competency development.

Introduction

Adolescence is a systemic and multidimensional developmental process shaped by a biopsychosocial environment. In a world facing climate change, armed conflicts, threats to gender and sexual rights, and rapidly evolving digital environments, adolescent health and well-being are declining worldwide[1], including in France[2, 3]. Although adolescents face important developmental, psychosocial, and behavioural health challenges, they generally enjoy better overall health than most other age groups[3]. Furthermore numerous studies have shown that medical students consistently report feeling underprepared and insufficiently competent to care for this population[4], particularly when addressing communication, confidentiality and psychosocial issues[5].

The persistence of these difficulties suggests that understanding the educational needs associated with adolescent medicine requires more than identifying curricular gaps; it also requires exploring how learners themselves experience and interpret these challenges. Roegiers conceptualised two approaches to defining curriculum training needs[6]. In the objectivist perspective, training needs are conceived as objective gaps between current professional practices and the institutional and societal expectations placed on healthcare professionals. Needs are considered realities that exist independently of individuals and can be identified by comparison with a standardised competency framework. In the current context of adolescent health, healthcare professionals report difficulties in caring for adolescents[7, 8] while facing rapidly evolving health challenges[3]. However, the institutional expectations governing the transition from undergraduate to postgraduate medical education, embodied in the National Ranking Examination, remain largely aligned with a biomedical-centred undergraduate curriculum[9, 10]. Furthermore, the relative invisibility of adolescents within healthcare systems and medical curricula may restrict learning opportunities, contributing to unmet educational needs in the training of future physicians. Yet adolescent medicine encompasses a family of complex and situated professional situations that require physicians to mobilise and integrate biomedical, developmental, psychosocial, relational, and ethical resources according to the needs of each individual adolescent[11]. Such complexity suggests that institutional competency frameworks may only partially capture what learners need to develop competence in adolescent healthcare.

This limitation invites consideration of the constructivist approach proposed by Roegiers[6], in which needs are understood as subjective constructions of reality. From this standpoint, learning needs emerge as interpretative constructions co-developed through the interaction between learners' experiences and the researcher’s analysis. This distinction echoes Norman’s differentiation between educational needs, defined by institutions and experts, and learning needs, identified by learners through processes of reflection and self-assessment[12]. To our knowledge, medical students’ learning needs in adolescent medicine have not previously been explored. Exploring these learning needs is particularly relevant, as all future physicians are likely to encounter adolescent patients and should be prepared to provide holistic, patient-partnership care.

Therefore, this study aimed to develop an understanding of undergraduate medical students' learning needs in adolescent medicine. Exploring these needs may contribute to improving adolescent health education and, ultimately, the health and well-being of adolescents.

Methodology

Study design

Adopting Roegiers' constructivist perspective, we conducted a qualitative study inspired by Charmaz's constructivist Grounded Theory (GT)[13] to co-construct these needs as interpretive renderings deeply rooted in students' lived experiences and social contexts[14]. Following GT principles, data collection and analysis were conducted iteratively using theoretical sampling and the constant comparative method. Coding and theory development were primarily conducted by the principal investigator, with emerging categories, theoretical interpretations, and the explanatory model being iteratively discussed and refined with the last author (CS).

Setting

The study was conducted at a French university medical school within a six-year undergraduate medical curriculum. Clinical placements begin in the fourth year through successive three-month rotations. During their clinical training, students are encouraged to undertake a placement in paediatrics. However, exposure to adolescent medicine varies considerably, as not all teaching hospitals include a dedicated adolescent medicine unit. Progression to postgraduate training is primarily determined by performance on the French National Ranking Examination (*Épreuves Dématérialisées Nationales*, EDN), making preparation for this examination a major determinant of students' learning priorities. The national paediatric reference textbook underpinning the EDN competency framework includes only two chapters specifically devoted to adolescent medicine among its 71 chapters[9].

Participants and data collection

A semi-structured interview guide was developed from the literature, expert perspectives, and previous learner feedback. Consistent with the iterative nature of GT, the guide was refined throughout data collection and analysis, although only minor revisions were required. The final version of the interview guide is presented in Table 1.

Table 1
Semi-structured interview guide

Theme	Question	Prompts
Opening	Tell me about a situation that you experienced with an adolescent.	How is a consultation with an adolescent different from a consultation with an adult? How would you describe an adolescent as a patient? What influence do you think your personal experience as an adolescent can have in the way you communicate during a medical interview with adolescents ? *If no medical experience* : Could you describe your last discussion with an adolescent
Participation in the training	What convinced you to send a mail to be registered for this training ?	What do you hope to gain from this optional course in addition to your current curriculum? How do you imagine this training? How do you feel about participating in a simulation with an adolescent patient? What are you most nervous about? What are you most looking forward to?
Expected benefits of the training	What impact on your future medical practice are you hoping for from this training?	Could you describe your previous training in taking care of adolescents?
Closure	Could you please share any last comments or questions to close this interview?	

Table 2
Summary of the categories, themes, and subthemes that emerged from the analysis.

Categories	Themes	Sub-themes
Competency	Internal resources	Knowledge, skills and attitudes related to adolescent care: • Declarative knowledge • Procedural knowledge • Conditional knowledge • Professional attitudes • Clinical and communication skills
		Recognition of students' personal backgrounds: • Prior knowledges • Students' biographical experiences
		Students' preconceptions of adolescents and their parents
	External resources	Role models and peers
		Role models and societal representation of adolescents
		Paediatric hospital environment and the integration of adolescents
Learning through supervised clinical participation	Direct supervision of clinical activities involving adolescents	
	Recognition of medical students as learners	
	Programmatic assessment of all dimensions of competency	
Professional identity development	Development of student's sense of competence	
	External recognition of medical students	
	Professionalism development	

Table 3

a: Main themes identified in participants' perceptions of adolescents

Theme	Verbatim (Student number)
Perceived developmental immaturity and vulnerability	*"People who didn't really care about anything"* (79) "*Whether they're 17, 16, or 3 months old, they're still vulnerable at different times, actually*" (27)
Challenges in the therapeutic relationship	"*[…] more reserved, and more distrustful of healthcare professionals*" (95) "*Changes are hard to deal with when you're facing someone who is a bit of an authority figure*" (85) "*They don't necessarily see the doctor as someone who will help them*" (30)
Perceived emotional, behavioural and mental health instability	"*They've got lots of emotions, lots of hormones.*" (84) "*The way they react and the way they think is always surprising*" (95) "*When I think of adolescents, I immediately think of […] psychiatric disorders.*" (30)
Adolescence as a distinct developmental stage	"*I think that we all go through difficult periods during adolescence.*" (34) "*adolescence is a difficult phase [...] especially for girls [...] there are a lot of physical changes that make us more self-conscious and that we don't really understand*" (30)
Emotional responses elicited in healthcare professionals	"*they're afraid*" (95 describing students' reactions to adolescent patients)

Table 3

b: Gender-related themes identified in participants' perceptions of adolescents

Theme	Verbatim (Student number)
Boys perceived as challenging and potentially threatening	"They are more motivated […] to engage in the consultation [...] than boys are" (81) "I thought that boys could develop aggressive, sexual, and sexist behaviours [...] starting in high school" (9)
Girls perceived as cooperative but socially constrained	"They are more motivated to find answers to their questions" (81) "Girls who want to look like an ideal, so lose weight and do all sorts of things to be a bit closer to the feminine ideal." (30)

Participants were recruited from a single French university medical school. Sixth-year medical students were purposively selected because they had generally completed a paediatric clinical placement and

therefore had greater opportunities to reflect on adolescent healthcare. Initial recruitment targeted students enrolled in an optional adolescent medicine course. In line with the principles of theoretical sampling, recruitment was subsequently extended to all sixth-year medical students as data analysis progressed, to explore emerging categories and increase variation in participants' experiences. Students enrolled in the optional course were interviewed before attending the course.

Participation in the optional adolescent medicine course and/or the interview was recognised within the undergraduate assessment system through bonus credits contributing to students' final national ranking examination score.

Interviews were conducted over a two-month period, from February to April 2026, until theoretical sufficiency was reached. None had previously met the principal investigator.

Interviews were audio-recorded, and transcribed verbatim. Participants were assigned a random identification number, and all identifying information was removed from the transcripts to ensure anonymity.

Data analysis

The principal investigator (GG), who had received formal training in qualitative research, conducted the initial, focused, and theoretical coding under the methodological supervision of two experienced qualitative researchers (CL and CS). Following line-by-line coding of the first interviews, the coding framework was progressively refined throughout the analysis. Constant comparison and memo writing informed the iterative analytical process, while regular discussions within the research team challenged and refined the evolving interpretation, supporting the development of categories and the construction of the final explanatory theory.

Ethics approval and consent to participate

The study received a favourable ethical opinion from the Committee for Integrity and Research Ethics in Health Professions Education(*Comité pour l'intégrité et l'éthique de la recherche en éducation des professions de la santé*) of the International Francophone Society for Medical Education (SIFEM), subject to incorporation of the committee's recommendations (approval No. 2026-05-01; final opinion issued on 3 February 2026). The committee's recommendations were addressed before the study was conducted. The SIFEM committee is an independent committee specializing in the ethical review of health professions education research and is therefore not institutionally affiliated with the authors' universities. All methods were carried out in accordance with relevant institutional and national guidelines and regulations and with the Declaration of Helsinki. All participants received written information about the study and provided written informed consent before participation.

Results

Ten students participated in the study (seven women, two men, and one non-binary student), with ages ranging from 23 to 30 years. All had previous clinical experience with adolescent patients during their medical training. Interview duration ranged from 48 to 90 minutes.

The analysis led to the identification of eight themes. Two themes were further developed into six subthemes (three subthemes each). These findings were organised into three overarching categories: competency, learning through supervised clinical participation, and professional identity development. In line with the constructivist Grounded Theory approach, these categories represent an interpretative reconstruction of participants' percieved learning needs. Although participants primarily described difficulties, uncertainties, and perceived gaps in their learning experiences, these accounts were analytically conceptualised as learning needs. Table 2 presents the hierarchical organisation of the categories, themes, and subthemes that emerged from the analysis.

Competency

Students consistently perceived a mismatch between the complexity of adolescent healthcare and the place it occupies within the undergraduate medical curriculum. Adolescent medicine was described as receiving limited attention in both the national paediatric curriculum and the French National Ranking Examination, leading participants to perceive it as a low educational priority.

"*In our [French national undergraduate paediatric curriculum], there are, I think, only three chapters on adolescence. Honestly, I don't think that's enough*." (Student 84)

"*We have almost no items, for example, at the [French National Ranking Examinations], that concern this topic*." (Student 95)

Beyond its limited curricular presence, students perceived their education as predominantly focused on declarative knowledge. They described few opportunities to develop communication skills, professional attitudes, or the practical competencies required to care for adolescents. Consequently, many experienced difficulty transferring theoretical knowledge into authentic clinical situations.

"*We are only medical students, so we are not necessarily trained in how to talk to a patient*." (Student 30)

"*It's never […] like in the course or like in the book*." (Student 81)

Despite these perceived limitations, participants demonstrated a holistic understanding of adolescent healthcare. They spontaneously described adolescent medicine as requiring an integrated approach that extends beyond biomedical knowledge to encompass developmental, psychological, social, and relational dimensions.

"*An adolescent is a patient who needs to be approached in their entirety*." (Student 34)

Internal resources

Students described drawing upon personal experiences as an important internal resource when interacting with adolescent patients. These experiences appeared to enhance their understanding of adolescent development, increase their motivation, and influence the way they approached consultations.

"*It was a topic that gradually made me more aware, more attentive, and more inclined to ask questions about these kinds of issues. It made me realize that they could have an impact on development*." (Student 34, drawing on their own experience of parental separation)

However, personal experiences could also create emotional vulnerability when clinical situations resonated with participants' own life histories.

"*I also had a lot of difficulties with diet. So, really, I didn't appreciate this internship*." (Student 59, referring to a clinical placement in a service caring predominantly for patients with eating disorders)

Participants also recognised that their interactions with adolescents were influenced by numerous pre-existing representations of adolescents. Although these representations had never been explicitly addressed during medical training, they appeared to shape participants' clinical reasoning and communication. Given their richness and recurrence across interviews, the principal representations identified through the analysis are synthesised in Tables 3a and 3b.

External resources

Competency development was also shaped by the surrounding learning environment. Peers, residents, and attending physicians emerged as influential external resources that shaped both learning opportunities and professional attitudes.

Peer judgement was frequently described as a source of anxiety, particularly during educational assessments.

"*I was afraid of doing something wrong, of being judged, and of saying something stupid*." (Student 95)

Residents and attending physicians were perceived as powerful role models, with students often learning by observing and reproducing their behaviours.

"*We just copy them*." (Student 30)

However, participants also reported observing negative attitudes towards adolescent patients among healthcare professionals, which sometimes reinforced stereotyped representations of adolescents.

"'*Oh no, I'm sure he has nothing,' something like that. […] It really struck me that she said that before even seeing the patient. […] She had already formed a preconceived opinion*." (Student 95, describing an adolescent patient in the emergency department)

"*It really struck me the first time it happened, when everyone started complaining*." (Student 84, referring to the arrival of another adolescent patient in the emergency department)

Finally, the clinical environment itself was perceived as offering relatively few resources adapted to adolescent care. Participants described paediatric departments as primarily organised around younger children, contributing to the relative invisibility of adolescents within routine clinical practice.

"*There are protocols for almost everything with children. We know exactly what to do and how to do it. Everything moves quickly. With adolescents, it's always a bit more complicated. We're never quite sure what to do. Maybe we don't even have the right resources, since it's a paediatric department*." (Student 84)

Learning through supervised clinical participation

Students consistently described a discrepancy between the responsibilities they assumed during clinical placements and the educational support they received. While some reported having little opportunity to engage with adolescent patients, others were expected to conduct consultations despite feeling insufficiently prepared.

"*The department's policy [...] was that medical students weren't supposed to see child and adolescent psychiatry patients*." (Student 34)

"*With adolescents, I almost don't remember ever having had the opportunity to put it into practice*." (Student 34)

"*[GG] How had you been prepared before seeing adolescent patients?*
[84] Not much. Like... not at all, really."

Across interviews, direct supervision emerged as largely absent. Students commonly described interviewing adolescent patients independently before presenting the case to a resident, who subsequently reassessed the patient without having observed the initial consultation. This organisation limited opportunities for direct observation, feedback, and workplace-based assessment.

"*He came in afterwards and basically conducted another interview himself, but he hadn't seen mine*." (Student 59)

"*We basically do everything ourselves.*" (Student 79)

Rather than perceiving themselves as learners engaged in a supervised educational process, participants frequently described functioning as contributors to clinical service. These experiences were interpreted as reflecting a need for supervised clinical participation characterised by direct observation, feedback, and progressively increasing responsibility.

Professional identity development

Professional identity development emerged as a gradual process through which students sought to define their place within adolescent healthcare teams. Participants frequently questioned both their legitimacy and their capacity to act when confronted with complex clinical situations, often describing feelings of uncertainty or powerlessness.

"*Finding myself faced with a helpless situation [...] where I feel that I have no control*." (Student 34)

Recognition from supervisors appeared central to this process. Being trusted with greater responsibility, such as conducting consultations independently, reinforced students' confidence and contributed to their emerging identity as future physicians.

"*Because we're medical students, there's more trust, and they more often let us go and see patients by ourselves*." (Student 79)

However, these experiences varied considerably across clinical placements. While some students described authentic participation in patient care, others reported being assigned primarily administrative tasks, leading them to question the educational role attributed to medical students within clinical departments.

"*We were basically just admission machines [...] and it wasn't very pleasant*." (Student 34)

"*How can departments be made more aware, overall, of what is supposed to be the role of a medical student?*" (Student 34)

Participants also reflected on the particular challenge of caring for adolescents who were often close to them in age. While some perceived this age proximity as facilitating trust and communication, they also described difficulties maintaining professional boundaries and positioning themselves as healthcare professionals.

"*It made it easier for teenagers to confide in me because I was the youngest*." (Student 9)

One participant described how participating in therapeutic activities alongside adolescent patients created uncertainty about her own place within the care setting, blurring the distinction between learner and patient.

"*You're not really sure whether you're there as a patient or as a healthcare professional*." (Student 84)

Developing and maintaining appropriate professional boundaries therefore emerged as an important component of professional identity formation.

"*I think I drew a line and insisted on using formal address once I felt that the patient was breaking that professional distance by switching to informal address. At that point, the patient using informal address with me suddenly meant that they really saw me as a friend rather than as a student in the department*." (Student 9)

Emerging theory

The emerging theory suggests that students' learning needs in adolescent medicine are structured around the dynamic interaction of competency, learning through supervised clinical participation, and professional identity development. Competency is built through the mobilisation of internal and external resources, but only acquires meaning when enacted in clinical practice. These enactment experiences, in turn, contribute to the construction of professional identity, which subsequently shapes how students engage with future learning opportunities and clinical situations. The resulting process is iterative rather than linear, with each category continuously influencing the others. This explanatory model is presented in Figure 1.

Discussion

Learning needs extend beyond knowledge acquisition

This study suggests that undergraduate medical students' learning needs in adolescent medicine extend well beyond the acquisition of declarative knowledge. Although participants perceived adolescent medicine as occupying a marginal place within undergraduate teaching and assessment, they primarily described difficulties in mobilising knowledge in authentic clinical encounters. They also highlighted the influence of personal experiences, prior representations, role models, and the clinical environment on their learning.

These findings support competency-based perspectives, in which professional competence emerges from the mobilisation of multiple internal and external resources rather than from knowledge alone[15]. They also reinforce calls for a shift from teaching-centred curricula towards learning environments that promote contextualised learning, communication skills, clinical reasoning, and reflective practice[16]. Together, our findings suggest that the current constructive alignment of undergraduate medical education may insufficiently support the development of the complex competencies required in adolescent healthcare[17].

Supervised clinical participation as the engine of learning

While competency describes what students need to develop, our findings suggest that supervised clinical participation represents the principal mechanism through which this development occurs. Participants consistently described learning as emerging from authentic participation in adolescent care rather than from observation or theoretical teaching alone. However, they also reported limited opportunities to participate in consultations under direct supervision, receive feedback, or discuss their performance with experienced clinicians.

These findings are consistent with Vygotsky's concept of the zone of proximal development, whereby progressively challenging activities become educationally meaningful when accompanied by appropriate supervision[18]. They also align with contemporary perspectives on workplace learning and

programmatic assessment, which emphasise observation, feedback, and progressively increasing responsibility as central mechanisms of competency development[19].

Importantly, students did not simply describe a need for more clinical exposure. Rather, they described a need for participation that is explicitly recognised as a learning activity. In this perspective, supervision, observation, feedback, and progressive responsibility are not isolated educational interventions but complementary conditions that transform clinical participation into meaningful learning opportunities. Entrustable Professional Activities (EPAs) may provide a useful framework for operationalising this process within adolescent medicine[20].

Professional identity develops through participation

Our findings further suggest that supervised clinical participation contributes not only to competency development but also to professional identity formation. Students described progressively defining their place within healthcare teams, negotiating appropriate relationships with adolescent patients, and constructing legitimacy through interactions with supervisors and role models. Conversely, the absence of supervision, recognition, or educational responsibility appeared to hinder this process.

These findings support existing models of professional identity formation, which conceptualise identity as emerging through participation in communities of practice, interactions with role models, and progressively increasing responsibility[21,22]. Interestingly, students rarely identified clinicians recognised for their expertise in adolescent medicine, potentially contributing to uncertainty regarding both their own professional positioning and the place of adolescent medicine within medical practice.

Our findings also resonate with Costalat-Founeau's model of identity dynamics, in which professional identity develops through the interplay between identification, recognition, and perceived capability[23]. Students repeatedly described seeking recognition from supervisors, developing confidence through progressively assuming clinical responsibilities, and negotiating their place within healthcare teams. Interestingly, these dimensions closely mirror the three categories emerging from our analysis. Competency reflects students' perceived capability, supervised clinical participation provides opportunities for recognition through observation, feedback, and progressive responsibility, and these experiences contribute to professional identity development.

An emerging explanatory theory

The explanatory theory generated through this study proposes that medical students' learning needs in adolescent medicine are organised around the dynamic interaction between competency, learning through supervised clinical participation, and professional identity development. Competency is constructed through the mobilisation of internal and external resources. However, these resources only become educationally meaningful when learners are able to mobilise them through supervised participation in authentic clinical situations. Through this process, students progressively construct their

professional identity, which subsequently shapes how they engage with future learning opportunities and clinical practice.

Rather than representing three independent dimensions, competency, learning through supervised clinical participation, and professional identity development appear to form a mutually reinforcing learning process. This model extends competency-based approaches by identifying supervised clinical participation as the central mechanism linking competency development with professional identity formation. Figure 1 illustrates this explanatory model.

The relevance of this theory may extend beyond adolescent medicine. The specific challenges of adolescent care place professional identity development at the forefront of students' experiences and make particularly visible the tensions between knowledge acquisition, competency mobilisation, and professional becoming. These tensions are likely present across undergraduate medical training but may be less apparent in more biomedical specialties, where technical knowledge occupies a more prominent role. Adolescent medicine may therefore constitute a particularly revealing educational context for understanding broader processes of competency development and professional identity formation in medical education.

Strengths and limitations

Although this study was conducted at a single French medical school, several features of the French undergraduate medical curriculum are nationally standardised, including the competency framework, paediatric curriculum, and National Ranking Examination, supporting the transferability of the findings across French medical schools. Transferability to other educational systems should nevertheless be considered cautiously. A degree of social desirability bias cannot be excluded, despite participants having no prior relationship with the principal investigator and being informed that their responses would remain confidential. Recruitment was facilitated through academic credits awarded within the undergraduate assessment system, meaning that participation was not restricted to students with a particular interest in adolescent medicine and may therefore have reduced the self-selection bias commonly encountered in voluntary educational research. Furthermore, only medical students' perspectives were explored.

The analysis was conducted by the principal investigator under the methodological supervision of the research team and was informed by several key principles of constructivist Grounded Theory, including iterative data collection and analysis, constant comparison, memo writing, and regular analytical discussions, strengthening the credibility of the findings. To our knowledge, this is the first study to propose an explanatory model of undergraduate medical students' learning needs in adolescent medicine, identifying supervised clinical participation as the central mechanism linking competency development with professional identity formation.

Conclusion

This study proposes an explanatory model suggesting that learning adolescent medicine extends beyond knowledge acquisition. Competency development, learning through supervised clinical participation, and professional identity development appear to form a mutually reinforcing process through which students progressively learn to care for adolescents. Consequently, improving undergraduate adolescent medicine education requires learning environments that support the mobilisation of internal and external resources, provide meaningful opportunities for supervised clinical participation, and foster professional identity development.

Beyond identifying learning needs, this model offers a framework for understanding how future physicians learn to care for adolescents and where educational interventions may have the greatest impact. Future research should explore whether this model is supported by the perspectives of residents, experienced clinicians, and adolescents themselves, with the aim of co-constructing a shared vision of competency development in adolescent medicine.

Abbreviations

- EPAs
Entrusable Professional Activities
- GRMSA
Research Group for Adolescent medicine
- GT
Grounded Theory
- SIFEM
International Francophone Society for Medical Education

Declarations

- Ethics approval and consent to participate: The study received a favourable ethical opinion from the Committee for Integrity and Research Ethics in Health Professions Education(*Comité pour l'intégrité et l'éthique de la recherche en éducation des professions de la santé*) of the International Francophone Society for Medical Education (SIFEM), subject to incorporation of the committee's recommendations (approval No. 2026-05-01; final opinion issued on 3 February 2026). The committee's recommendations were addressed before the study was conducted. The SIFEM committee is an independent committee specializing in the ethical review of health professions education research and is therefore not institutionally affiliated with the authors' universities. All methods were carried out in accordance with relevant institutional and national guidelines and regulations and with the Declaration of Helsinki. All participants received written information about the study and provided written informed consent before participation.
- Consent for publication: Not applicable

- Availability of data and materials: The datasets generated and/or analysed during the current study are not publicly available due to participant confidentiality and ethical restrictions but are available from the corresponding author on reasonable request.
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- Authors' contributions: GG conceived the study, designed the interview guide, conducted the interviews, performed the data analysis, and drafted the manuscript. CL contributed to the study design, supported data analysis and interpretation, and critically revised the manuscript. CS contributed to study conception and design, supervised the analytical process and theory development, supported data interpretation, and critically revised the manuscript. All authors read and approved the final manuscript.
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Figures

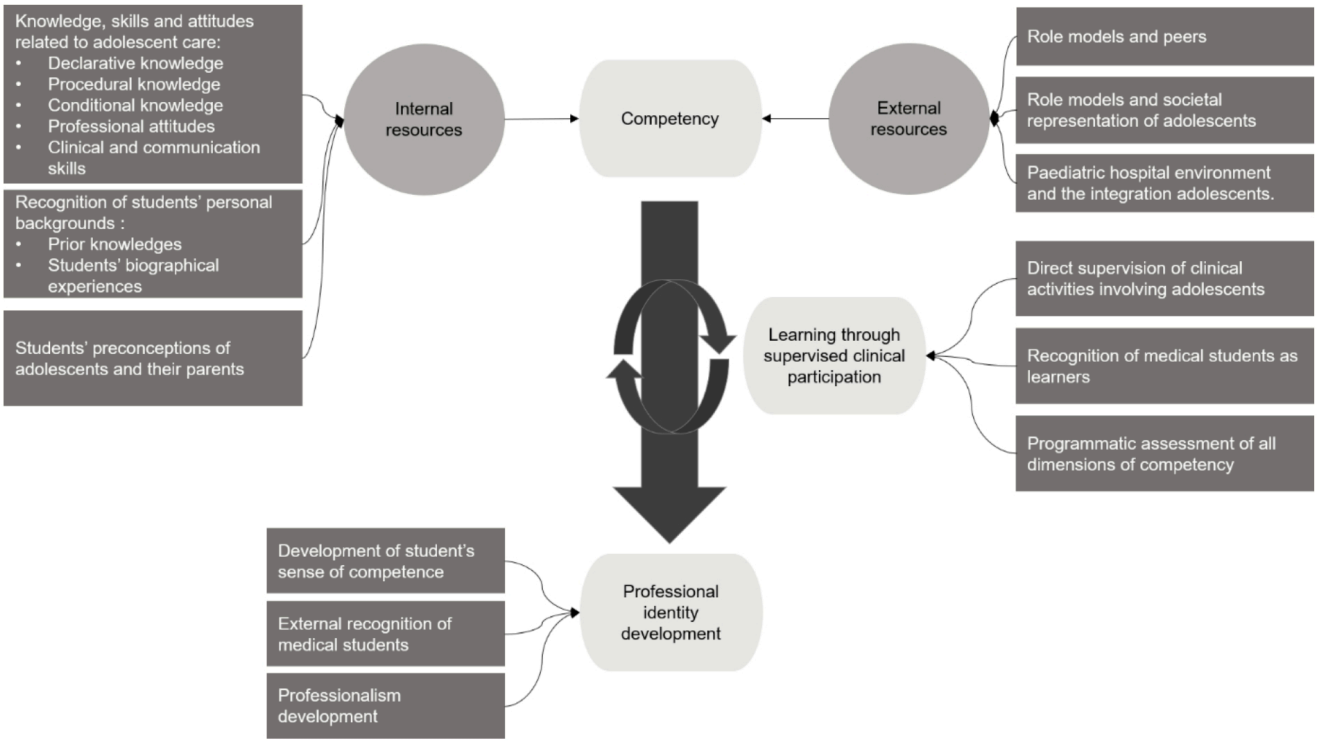


Figure 1

Explanatory theory describing the learning needs of medical students in adolescent medicine.