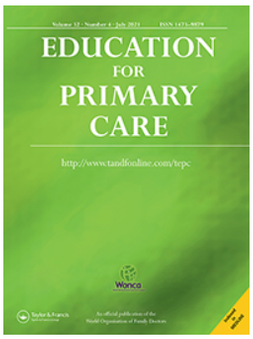

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Medical students and clinical placements - a qualitative study of the continuum of professional identity formation

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ABSTRACT

Background: To explore graduates' perceptions of significant factors affecting professional identity formation (PIF) throughout their graduate medical school education journey and early practice years.

Methods: A qualitative study with medical graduates using non-probability sampling. Data collected with graduates via face to face and telephone interviews. Interviews (n = 9) completed with medical graduates of the School of Medicine, University of Limerick.

Results: Graduates described their experiences in general practice, during the early patient contact programme and the longitudinal integrated clerkship (LIC) as highly influential. The lasting impact of positive role models was highlighted. The importance of socialisation and entering a community of practice were identified as drivers of professional development. Role modelling and mentorship between students and GP tutors were pivotal as part of early clinical years and clinical LIC. This seemed to have a positive influence on graduate's consideration of general practice as a future career pathway.

Conclusion: Professional identity formation occurs for medical students who participate in early patient contact programmes and longitudinal integrated clerkships in GP. Factors such as positive role modelling, good mentorship, communities of practice and a positive learning environment appear to be the main contributors to this process. Experiences as part of longitudinal integrated clerkships are meaningful for graduates, regardless of postgraduate specialisation choices. Educators should acknowledge this when designing medical curricula to ensure that students' professional identity formation is optimally facilitated. Training should be available to support the educators involved in longitudinal integrated clerkships, as they become role models and mentors to students.

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Professional identity formation; early patient contact programme; general practice; longitudinal integrated clerkship

Introduction

Professional identity formation has been defined as an 'integrative developmental process that involves the establishment of core values, moral principles, and self-awareness' [1]. It is increasingly recognised as an important component in the education of future doctors [1–4]. As such, medical educators need to monitor the impact of their medical curricula on students' professional identity formation [5].

Many modern curricula integrate teaching of biomedical sciences with real-life clinical experiences through early patient contact programmes (EPCP). Some curricula give equal emphasis to community-based and hospital-based teachings by hosting community-based longitudinal integrated clerkships (LICs). EPCPs and LICs provide students with plentiful opportunities for situational learning. LICs have been defined as 'placements where students participate in the comprehensive care of patients over time … participate in continuing learning relationships with these patients' clinicians and … meet the majority of the year's core clinical competencies, across multiple disciplines simultaneously' [6].

These situational learning experiences allow students develop their basic clinical skills and competencies, and more complex tasks associated with being a practicing physician such as developing rapport with and communicating with patients and learning to manage all facets of complex illnesses [7]. Students have reported benefits of LICs both to their clinical skills and to personal development [8]. Other benefits as reported by Brown et al. [9] include benefits to students (more patient-centred and able to deal with uncertainty), benefits to the community (benefits in terms of clinical recruitment in rural areas), benefits to patients (perceive greater access

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to care through advocacy from the student). Students begin to learn about communities of practice, communities in which they are at the periphery initially, but over time adopt a more central role as an active learner in a multi-disciplinary team [10,11]. A key element of this is time as trust and relationship building are fundamental aspects of this process [12]. Thus, opportunities for situational learning are maximised by clerkships of longer durations. Thistlethwaite et al.'s review of longitudinal medical student placements also highlights 'continuity of mentorship' as key to success [13]. In these learning environments, students also become socialised [1,2,14,15] and learn to embody the values and formal practices of being a doctor.

Context

The four-year Bachelor of Medicine Bachelor of Surgery (BMBS) graduate entry medical programme at the School of Medicine at the University of Limerick is an integrated curriculum that, in the first two years, delivers the basic biomedical sciences and professional competencies including a two-year-long Early Patient Contact Programme (EPCP). The main objective of the EPCP is for students to develop an understanding of illness and healthcare from a patients' perspective as part of their professional competency teaching. In groups of three, students are assigned a patient from an affiliated general practice. Most patients in the programme have a chronic or multiple illness(es) or students may be assigned to an expectant mother. Students also get the opportunity to interact with patients in their homes, in GP surgery and at hospital appointments. As part of this programme, students gain early clinical exposure, with an emphasis on patient care and the start of their professional identity formation journey.

Besides, students in the School of Medicine undertake their longitudinal integrated clerkship in general practice and primary care as part of the third year, spending 18 weeks working in a single general practice, often as part of a multi-disciplinary team. Learning occurs across all disciplines (paediatrics, medicine, psychiatry, surgery) in the setting of general practice, under the guidance of an established GP tutor for the entirety of the clerkship. At the start of their LIC, students observe the GP tutor consulting with patients, then transition into parallel consulting, learning to perform tasks similar to the GP tutor, under close supervision. All practices are members of the University of Limerick Education and Research Network (ULEARN-GP) [16]. The longitudinal integrated clerkship, built on the concept of continuity, may offer the patient and learner-centeredness that are sometimes missing in the traditional curricular structure of the clinical clerkship [17].

Whilst there has been significant research undertaken with medical students before, during and following completion of an LIC, no research has looked at medical school alumni post-graduation looking back on enduring experiences that influenced their professional identity. To address this, authors decided to adopt a constructivist approach, allowing for authors to examine how participants' narratively describe and explore their early clinical experiences as a medical student looking back and its impact on their identity to current day [18]. Our original research question sought to explore graduates' perceptions of significant factors affecting professional identity formation (PIF) throughout their medical school journey. In exploring such, the importance of early clinical exposure and general practice placement were identified as key in participants' professional identity formation.

Methods

Ethics

The Research Ethics Committee of the Faculty of Education and Health Sciences at the University of Limerick reviewed and approved this research (2019_06_31_EHS).

Setting

This qualitative study was carried out at the School of Medicine at the University of Limerick using non-probability, voluntary sampling amongst graduates of the BMBS programme. Volunteer sampling is often described as a form of non-probability sampling, 'the final sample is selected from the potential respondents who are willing and qualifying to enter' [19]. All graduates of the recently inaugurated (spanning 10 years) BMBS programme at the School of Medicine, University of Limerick, were asked to participate in this research (n = 1178). After data cleaning of bounce back emails (n = 372), a final number of graduates were contacted (n = 758). Graduates from 2011 to 2019 were contacted by an independent gatekeeper (School of Medicine Research Administrator) using a school list of contacts (provided by graduates) and invited to participate in a semi-structured interview. Participants who volunteered to take part were contacted by a research assistant who organised and facilitated the interviews.

Data collection

We conducted face to face or telephone semi-structured interviews with graduates. The method used was that most practical and accessible for participants. Authors decided to adopt a retrospective approach, which asked graduates to reflect on the different milestones they experienced before deciding on medicine, during their medical student career and on to later stages in their career. This approach would also align with a constructivist methodology; participants would narratively discuss their experiences of constructing their identity, as reflections on their experiences in medical school, but also the impact of their professional identity to date. For many graduates, this was an opportunity to discuss topics for the first time in many years. Questions asked as part of this interview included 'What did you learn about professionalism in years 1 & 2', 'How did you find the transition between the pre-clinical and clinical years', and 'What did you learn about professionalism in years 3 & 4 (clinical years)'. See Appendix A for further questions asked.

Before the start of each interview, participants were given information sheets to read, describing the study and also outlining their level and type of participation in the study. Each participant was asked to provide written consent before commencing each interview. A comprehensive interview guide was used, which had been reviewed by DOD, DK and HMK. Interviews took place over ten weeks. All interviews were audio-recorded, with consent being given by all participants for this to occur. Interviews lasted on average 45 minutes, with audio files being transcribed. These files were transcribed by one author (DOD) and reviewed by another (DK) to limit any bias. The research team reviewed data on an ongoing basis and until data saturation was noted, at which point data collection was completed. Following the review of transcripts from participants, it was agreed that data saturation had been reached. Data saturation has been described as the point at which no new information would be gathered in a study if additional participants would be interviewed [20]. Upon reviewing each interview, authors felt that at nine interviews data saturation had been achieved and that no further interview would add significant value.

Data analysis

We adopted Braun & Clarke's framework [21] for inductive thematic analysis on our qualitative interviews. This allowed us to inductively review codes, and later themes as individuals, and then collectively as a team (See Appendix B for thematic mapping). This iterative process generated three core themes with several minor themes using NVivo 11. DOD, SH, AC & JOD were responsible for the initial coding generation. To ensure qualitative rigour, quotes and themes were reviewed by all authors and refined.

Results

Participants

All participants were graduates of the BMBS programme, ranging in years since graduation <1 year (n = 1), 4 years (n = 1), 6 years (n = 1), 7 years (n = 1), 8 years (n = 5). In total eleven graduates volunteered to participate, with two being unable to participate due to external constraints. Of the nine participants who participated, five identified as GPs (55%), with the others practising in other disciplines. To protect their identity, no further delineation of speciality will be described. Glynn et al. [22] found that between 2011 and 2013, 43% of the graduates went into general practice.

Data

We conducted nine interviews with graduates; six interviews were completed by phone/skype and the remaining three took place face to face. As outlined, thematic analysis on qualitative interview garnered three main themes, with several sub-themes as described in Table 1. The themes generated were: 'Curriculum influences on professional identity formation', 'Relationships and socialisation and communities of practice' and 'Personal development'.

Generated using thematic analysis, the sub-themes 'Early patient contact programme', 'Duration of clerkship' and 'Role of the medical school in the future direction' were grouped under the 'Curriculum influences on professional identity formation'. The sub-themes 'GP tutor role-modelling', 'Mentorship' and 'Community of Practice' were grouped under the main theme of 'Relationships, Socialisation and Communities of Practice'. It was decided that these sub-themes were related in how they addressed essential elements of professional identity formation, namely, the socialisation into new communities of practice,

Table 1. Themes generated from qualitative interviews.

(1) Curriculum influences on Profesional Identity Formation		
a) Early patient contact programme	b) Duration of clerkship	c) Role of the medical school in future direction
(2) Relations, Socialisation & Communities of Practice		
a) GP tutor role modelling	b) Mentorship	c) Community of Practice
(3) Personal development		

with the influences of positive relationships with staff. The third theme directly relates to the participant's experiences of professional development.

Curriculum influences on professional identity formation

The medical curriculum at the School of Medicine not only overtly teaches professionalism and professional competencies as integral components but also provides opportunities noted by students to learn what a doctor is, their role, and associated responsibilities.

Early patient contact programme

As previously outlined, the first instance whereby many students learn to interact with real patients is through an Early Patient Contact Programme (EPCP). Students at this stage are just starting on the road of forming and developing a professional identity. This early exposure during their formative years was noted as having a lasting impression by many of our participants.

P6 (GP): *'we did the patient contact project in the first two years as well where we met the patient with chronic illness . . . (it) kind of gave you the first inkling that people are going to ask you your opinion whether you are a student of medicine or you are a doctor or whatever and you have to have a certain manner about you . . . there is a way that you need to conduct yourself in life with people and the different types of patient'*

P10 (GP): *' . . . with the early patient contact programme we have to go to their house so in a way it's kind of like going on a house call you know as a GP. So you see how people live, how their environment affects them in relation to their disease . . . I actually enjoyed that one. That was really good.'*

Duration of clerkship

Participants identified that the length of their clerkship (18 weeks) was instrumental in their learning experience in General Practice, and it allowed students to build rapport with GP tutors, thus helping them to further develop their professional identity.

P1 (GP): 'So we had 18 weeks and that would be I suppose something I would have valued'

P6 (GP): 'I would certainly say from my own career pathway, I had probably ended up back in GP because of my eighteen weeks in GP placement in [the Mid-West]. It was really unique programme.'

Role of the medical school

Several participants discussed how they felt that the School's curriculum, inclusive of the EPCP, was designed and how this encouraged their interest in professional identity formation. Graduates also discussed how they felt their tutors, all of whom are medically qualified, helped them in guiding their future career trajectory.

P10 (GP): 'Well I actually chose GP probably because of my GP placements in college'

P1 (GP): 'he [GP tutor] would have played a large impact on kind of my future direction at the time of thinking what I wanted to do so, certainly I think role models had a large impact on how you made that transition and how much you enjoyed it.'

Relationships, socialisation and community of practice

Many students commented on how aspects of the LIC contributed to a positive learning environment that facilitated professional identity growth. Repeatedly highlighted was the 18-week longitudinal integrated clerkship in general practice that was completed in either Year 3 or 4 with a GP tutor. This environment served as a key enabler for students to develop and consolidate their professional identity.

GP tutor role modelling

Participants identified strongly with their GP tutors, both professionally and personally, finding them to be knowledgeable educators and physicians.

> *P4 (NGP): "it was interesting [the] GP I got. He wasn't the old fashioned guy that knew everything. He's more like a young and up and coming vibrant, like very ambitious type one. So that was an interesting architype to be exposed to."*

P10 (GP): 'XX was an amazing woman. She has four children, she works full time. I was like, well I can do this you know like if she can do it I can do it. So she really was kind of a role model for me I felt and she was lovely she was so kind, so gentle'

Mentorship

One of the important factors highlighted by graduates as an influence on their professional identity was the mentorship from their GP tutors. This mentorship supported students, who for many, were transitioning from their early years into their clinical years of medical school.

P1 (GP): 'I would have gone from pre-clinical to a general practice setting and that person had a large impact on guiding me slowly'

P6 (GP): 'I would say that probably sowed a seed in me to be a GP (clerkship experience), it was such a positive experience and it was so immersive and he was such an enthusiastic teacher . . . '

Community of practice

Graduates spoke about how they slowly began to feel they were entering a 'community of practice', guided by the GP tutors they engaged with whilst on their LICs. Developing collegiate relationships with tutors, staff and patients at those practices influenced future career aspirations as well as professional identity.

P4 (NGP): 'And then the GP thing was very good because your met real [people], the GPs generally like they're very normal, very normal people. And I'm not saying that the doctor or hospital are abnormal but just like people in GP practice were all like dressed normally even. Whereas in hospitals are all dressed in weird funny ways like scrubs and stuff like that you don't know who's who.'

This community of practice also allowed graduates to be socialised into the ways of 'being a doctor', with this often being cited as a transformative time for students; moving from being on the periphery to being a core part of the clinical team.

P10 (GP): 'have this parallel consulting and you see a patient, you call the GP in they like they, tell you the story and you write all your notes you are actually doing a lot more very different to, you actually feel like you are doing something compared to the hospital placements where sometimes you may not feel as useful'

Students start their journey of entering the community of practice on the periphery, initially working on improving their clinical knowledge, engaging with the GP tutor and towards the latter end of their LIC, transition into parallel learning and seeing patients.

Personal development

Participants discussed at length their experiences of professional identity development in relation to a continuum of feelings they felt in transitioning from their early years into their clinical years. At the start of their GP placement, many felt quite apprehensive, opting to take their general practice rotation before hospital-based rotations, as 'an easy start' to clinical work.

P4 (NGP): 'I had done some catastrophic thinking about the whole thing . . . But I obviously was apprehensive because I obviously chose to do the GP thing first'

Over time, participants discussed how their feelings of apprehension towards general practice changed when they became more confident in their abilities. This newly found confidence was based on the relationship and support from their GP tutor, the new community of practice and through applying their new skills and competencies as part of a clinical team.

P1 (GP): 'and building confidence and then becoming more autonomous as the time went on . . . And you're realising that actually you're really privileged to be in that position and to be taking history from that patient. And to be keeping their information confidential. And so I think you realise from that or I certainly did some of the aspects of what it means to be involved in a profession.'

Discussion

Summary of main findings

In adopting a constructivist approach to exploring the key factors in participants' professional identify formation, this research has allowed us to explore and examine the factors that affected PIF narratively through participants' experiences to date. This study clearly demonstrates the importance of early patient exposure and the clinical learning environment of the longitudinal integrated clerkship in medical student's professional identity formation, even to the current day as practicing medicks. Findings have highlighted important components to professional identify formation, namely, GP tutor role modelling, mentorship and the importance of a community of practice.

Comparison with existing literature

Several curriculum experiences had a powerful impression on their ongoing professional identity formation for graduates, namely, the LIC clerkship and the EPCP. It is important to note that LIC was not the first clinical rotation for all participants and that not all continued their careers in GP, but this experience was nonetheless perceived as an important influence. This is not surprising as it there is already evidence of the association between the quantity and quality of general practice teaching at medical school and the choice of general practice as a future career destination for graduates [22]. The EPCP was identified as having had a positive effect on professional development, an unintended consequence of this programme. Initially designed to introduce students to a patient's perspective, it was described by graduates as a low-risk, low-responsibility introduction to patient contact and one

where they were first aware of being viewed as a doctor. Our study highlights the EPCP as an early stepping stone in professional identity formation. Graduates discussed their experiences; its challenges and surprises and the feelings of being a doctor, with one noting *'the patient thinks I am a doctor!'*. Being introduced to the reality of being a doctor early in their medical training, it can be argued, provides an impetus for PIF early in the careers of future doctors. Existing evidence describes at length the impact of LICs on students and tutors [23,24]; however, this study suggests that even with experience and hindsight of post-graduate training and practice, graduates still identify their time in LICs as having helped to shape their professional identity.

The integrated curriculum in the medical school under study does not have traditional learning experiences or events such as cadaver dissection or white coat ceremonies, often seen as rites of passage in the development of medical students' professional identities. Our findings agree with the study by Monrouxe et al. [15] that suggests that opportunities for experiential learning about professionalism instead of predominantly didactic teaching on the subject, are more effective in developing students' understanding of professionalism and professional identity. This can be witnessed primarily in graduates' discussions about their experiences in their LIC, the longitudinal impact of role modelling and mentoring on professional identity formation.

Relationships with mentors, role models, other colleagues and patients were central to the socio-cultural learning during clerkships [5,10]. The clerkship effectively supported the 'attainment' phase [25] in graduates' development of professionalism. Results are also consistent with previous studies showing that role modelling and mentoring are the most effective approaches for teaching professionalism [26]. Hudson et al. described teaching as a 'tradition of medical practice that goes back to Hippocrates' and a fundamental feature of this tradition is the 'reciprocal benefit' of relationships formed on LICs for GP supervisors, students and community [27].

The defining features of an LIC are students participating in patient care over time and developing relationships with those patients and mentors' [28,29]. An international consortium of experts in the area of LICs (known as CLIC or the Consortium of Longitudinal Integrated Clerkships) has identified three principles that underpin the student experience in this type of placement: continuity of patient care; continuity of supervision and continuity of curriculum [17]. In completing an 18-week placement in general practice, students learn to become more autonomous, building rapport with patients and putting their clinical skills into practice. A positive working relationship is also built with the GP tutors and other healthcare and non-healthcare team members. The relationships developed by students in community-based clerkships have been described as a 'win-win' for all the stakeholders [30].

Our curriculum facilitates students completing an 18-week LIC, thus allowing students to have an integrated, immersive experience, again building positive relationships and allows trust to be built between tutor and student. This was outlined by O'Regan et al. [16] in which they describe the LIC at the School of Medicine, UL. This 18-week LIC allows a comparable learning experience for students, differences only to be seen in urban and rural placements. It has been found that provided there is a sufficient infrastructure; students are not disadvantaged by being sent on placements to small and/or remote sites for their clinical education [31]. Since 2007, the 18-week LIC in general practice has not changed at the School of Medicine, University of Limerick.

This in turn enables students to assume more responsibility, taking on more complex tasks – moving from a peripheral role to a more central, autonomous position offering more opportunities to learn [32-34]. As trust develops over time, it leads to increased inclusion in the team and a sense of belonging [34]. This inclusion in a community of practice is central to the role of professional identity formation as outlined by Goldie [5] and Cruess et al. [14]. The LIC has previously been recognised as an innovation that facilitates situational learning and joining a community of practice [7].

Strengths & limitations

This study explores graduate reflections, looking back on influential experiences with GP and non-GP participants. These graduate participants were sampled from multiple cohorts, with similar experiences being discussed as part of in-depth interviews. The study was limited to a small number of participants (n = 9) but this was a result of achieving data saturation during the data collection process. Authors feel that participants could testify to their varied clinical experiences as medical students, both the positive and negative, and many commonalities emerged, and as such, data saturation had occurred. The authors feel that they gained a much better understanding of what students valued most during the BMBS programme in terms of professional identity formation. Whilst we do not argue that this work is representative of all medical student journeys, we suggest that despite the expansive experiences across different clinical contexts, there are some shared

commonalities that influence identity. We do recognise however that some graduates may be omitted here, those who did not want to engage with this study, those who may have switched professions or moved out of the medical field. Whilst this assessment of professional identity formation is a self-assessment, there are merits in understanding the lived experiences of medical students. The role of recall bias should also be noted [35], with many participants reflecting on their medical school journeys, often with ten years' hindsight. There is the benefit of being able to integrate a prior experience into the participants' trajectory later in their careers, and for them to have a more gestalt view of how the experience contributed to their identity formation.

Results showed the true power of the LIC; in having a positive learning experience, supported by situational learning and support given by the GP tutor, this was an extremely formative experience, which leads to 55% of our graduates who participated in this study to become general practitioners. A study by Glynn et al. [22] also highlights that 43% of all medical students who graduated between 2011 and 2013 went into general practice specialisation, having experienced a formative 18-week LIC. In having spent many years in practice, for the majority of participants, this study offered them the time to be reflective of their experiences in medical school, and reflexive in identifying the EPCP and their LIC as key moments that contributed to their professional identity formation.

Implications for research and practice

One of the central findings of this research on professional identity formation was that of the value and importance graduates found in their experiences of the EPCP and their extended general practice placement or LIC. This research has highlighted that early teaching experiences and curricula are pivotal for students. This is particularly important for medical educators and curriculum developers as our study suggests that these early years' experiences have a long-lasting, profound effect on PIF. It is also important as it demonstrates the positive impact of clinical training provided in the primary care context to medical students, in particular the exemplar role models that exist in primary care for students' professional identity formation.

Conclusion

This study offers medical educators and medical curriculum developers insight into how curriculum design and delivery can contribute to students' professional identity formation. The programme under study appears to support students' professional identity formation, offering several powerful PIF learning moments for students. This research has added to the existing body of knowledge that early patient contact and LICs allow students to learn continuity of care with patients, gain a deeper understanding of the chronic disease, enhance communication skills and improve student confidence [36]. Moreover, a positive experience in GP placement is meaningful for graduates, regardless of specialisation. These results add to current knowledge on how undergraduate medical curriculum design can be optimised to support students' professional identity formation.

List of Abbreviations

GP: General Practice
PIF: Professional Identity Formation
EPCP: Early Patient Contact Programme
LIC: Longitudinal Integrated Clerkship

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Declarations

The Research Ethics Committee of the Faculty of Education and Health Sciences at the University of Limerick reviewed and approved this research (2019_06_31_EHS). Written and verbal consent was given by participants who took part in this research study.

Consent for publication

Participants have given their written and verbal consent to take part in this research.

Availability of data and materials

Data and materials generated and analysed during the current study are available from the corresponding author on reasonable request.

Disclosure statement

The authors declare that they have no competing interests.

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References

[1] Holden MD, Buck E, Luk J, et al. Professional identity formation: creating a longitudinal framework through time (transformation in medical education. Aca Med. 2015;90:6.
[2] Wald H, Anthony D, Hutchinson TA, et al. Professional identity formation in medical education for humanistic, resilient physicians: pedagogic strategies for bridging theory to practice. Aca Med. 2015;90:6.
[3] Wong A, Trollope-Kumar K. Reflections: an inquiry into medical students' professional identity formation. Med Educ. 2014;48(5):489–501.
[4] Barnhoorn PC, Bolk JH, Ottenhoff-de Jonge MW, et al. Causes and characteristics of medical student referrals to a professional behaviour board. Int J Med Educ. 2017;8:19–24.
[5] Goldie J. The formation of professional identity in medical students: considerations for educators. Med Teach. 2012;34(9):641–648.
[6] Couper I, Worley P, Strasser R. Rural longitudinal integrated clerkships: lessons from two programs on different continents. Rural Remote Health. 2011;11(1):1665.
[7] Van der Zwet J, Zwietering PJ, Teunissen PW, et al. Workplace learning from a socio-cultural perspective: creating developmental space during the general practice clerkship. Adv Health Sci Educ. 2011;16 (3):359–373.
[8] Beattie J, Binder M, Ramsbottom V, et al. The role of vertically integrated learning in a rural longitudinal integrated clerkship. BMC Med Educ. 2019;19(1):328. .
[9] Brown M, Anderson K, Finn GM,A. Narrative literature review considering the development and implementation of longitudinal integrated clerkships, including a practical guide for application. J Med Educati Curr Devel. 2019;6:1–12.
[10] Illing JC, Morrow GM, Rothwell Nee Kergon CR, et al. Perceptions of UK medical graduates' preparedness for practice: a multi-centre qualitative study reflecting the importance of learning on the job. BMC Med Educat. 2013 13(34).
[11] Lave J, Wenger E. Situated learning: legitimate peripheral participation. Cambridge: Cambridge University Press; 1991.
[12] Daly M, Roberts C, Kumar K, et al. Longitudinal integrated rural placements: a social learning systems perspective. Med Educ. 2013;47(4):352–1261.
[13] Thistlethwaite JE, Bartle E, Chong AAL, et al. A review of longitudinal community and hospital placements in medical education: BEME Guide No. 26. Med Teacher. 2013;35(8):E1340–E1364.
[14] Cruess RL, Cruess SR, Boudreau D, et al. Reframing medical education to support professional identity formation. Acad Med. 2014;89(11):1446–1451.
[15] Monrouxe L, Rees C, Hu W. Differences in medical students' explicit discourses of professionalism: acting, representing, becoming. Med Educ. 2011;45 (6):585–602.
[16] O'Regan A, Hayes P, O'Connor R, *et al*. The university of limerick education and research network for general practice (ULEARN-GP): practice characteristics and general practitioner perspectives. BMC Fam Pract. 2020;21(1):25.
[17] Hirsh DA, Ogur B, Thibault GE, et al. "Continuity" as an organizing principle for clinical education reform. NEJM. 2007;356(8):858–866.
[18] Adom D, Yeboh A, Ankrah AK. Constructivism philosophical paradigm: implication for research, teaching and learning. Glob J Arts Human Soc Sci. 2016;4 (10):1–9.
[19] Voluntary Sampling MS. Design. IJARMSS. 2015;4:2.
[20] Faulkner SL, Trotter SP. Data Saturation. The international encyclopedia of communication research methods. 2017. 10.1002/9781118901731.iecrm0060
[21] Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77–101.
[22] Glynn LG, Regan AO, Casey M, *et al*. Career destinations of graduates from a medical school with an18 week longitudinal integrated clerkship in general practice: a survey of alumni 6 to 8 years after graduation. Ir J Med Sci. 2020. 10.1007/s11845-020-02260-0 .
[23] Bates J, Konkin J, Suddards C, et al. Student perceptions of assessment and feedback in longitudinal integrated clerkships. Med Educ. 2013;47:4.
[24] Weston KM, Hudson JN. Clinical scholarship among preceptors supervising longitudinal integrated medical clerkships in regional and rural communities of practice. Aust J Rural Health. 2014;22(2):80–85.
[25] Hilton S, Slotnick HB. Proto-professionalism: how professionalisation occurs across the continuum of medical education. Med Educ. 2005;39(1):58–66.
[26] Birden H, Glass N, Wilson I, et al. Teaching professionalism in medical education: A best evidence medical education (BEME) systematic review, BEME Guide No. Med Teach. 2013;35(7):e:1252–66.
[27] Hudson J, Weston K, Farmer E. Engaging rural preceptors in new longitudinal community clerkships during workforce shortage: a qualitative study. BMC Fam Pract. 2011;12:1.
[28] Konkin J, Suddards C. Creating stories to live by: caring and professional identity formation in a longitudinal integrated clerkship. Adv Health Sci Educat. 2012;17 (4):585–596.
[29] Norris T, Schaad D, DeWitt D, et al. Longitudinal integrated clerkships for medical students: an innovation adopted by medical schools in Australia, Canada, South Africa, and the United States. Aca Med. 2019;84 (7):902–907.
[30] Worley P. Integrity: the key to quality in community-based medical education? (part two). Educat Health Change Learn Pract. 2002;15(2):129–138.
[31] Denz-Penhey H, Murdoch JC. Is small beautiful? Student performance and percpetions of their

experience at larger and smaller site in rural and remote longitudinal integrated clerkships in the Rural Clinical School of Western Australia. Rural Remote Health. 2010;10:1470.

[32] Latessa R, Schmitt A, Beaty N, et al. Preceptor teaching tips in longitudinal clerkships. Clin Teach. 2015;13 (3):213–218.

[33] Hauer K, Mazotti L, O'Brien B, et al. Faculty verbal evaluations reveal strategies used to promote medical student performance. Med Educat Online. 2011;16(1):6354.

[34] Roberts C, Daly M, Held F, et al. Social learning in a longitudinal integrated clinical placement. Adv Health Sci Edu. 2016;22(4):1011–1029.

[35] Pannucci CJ, Wilkins EG. Identifying and avoiding bias in research. Plast Reconstr Surg. 2010;126 (2):619–625.

[36] Latessa A, Swendiman RA, Parlier AB, *et al*. Graduates' perceptions of learning affordances in longitudinal integrated clerkships: a dual-institution, mixed-methods study. Acad Med. 2017;92(9):1313–1319.