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Medical students' perceptions of "Community" in a Longitudinal Integrated Clerkship

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Introduction

Longitudinal Integrated Clerkships (LIC) are a mode of medical education that involves extended clinical placements and learning beyond disciplinary boundaries. They have been shown to increase service provision in underserved regions and simultaneously provide educational advantages [1]. LICs assist in promoting rural career choices when undertaken in rural communities and enhance patient-centredness through longitudinal and community-engaged learning [2]. There has been a wide variation in LIC programmes across the globe with respect to programme length, cohort size and health care settings. Table 1 illustrates the widely accepted typology by Worley et al [3] along with the key characteristics.

Despite the variations in LIC programmes, they share the following common core elements (Consortium of Longitudinal Integrated Clerkships - CLIC, 2018):

- Medical students participate in the comprehensive care of patients over time;
- Medical students have continuing learning relationships with the patient's clinicians;
- Medical students meet, through these experiences, the majority of the year's core clinical competencies across multiple disciplines simultaneously.

Integration, continuity and longitudinality are recognised as the key dimensions facilitating learning in LICs. Although the understanding of these dimensions varies in the existing literature, there is broad consensus on the relevant underlying principles related to clinical clerkships. Ellaway et al [4] outline integration as "conceptual and practical connections between components, participants and contexts in a training programme". In addition, integration in LIC context would imply coalescing of different specialities within the "comprehensive patient care over time" [5]. Continuity is described as the 'flow between components, participants and contexts' and is a major factor ensuring a seamless learner experience during LICs [4]. According to Ellaway et al, longitudinality is "the persistence of participants, contexts and education components over time, without necessarily being continuous" [4]. However, "continuity" has been frequently used synonymously with 'longitudinality' in the existing literature, and the intent of 'longitudinal' programs is that they afford 'continuity' of some type [6]. It is also noteworthy that there is no fixed duration requirement for a programme to be termed longitudinal. A majority of the LICs worldwide have been based in small rural areas where continuity with the healthcare and the patient

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community occurred by default. The role of community in LICs is pivotal as “it is the community that truly embraces many of the LIC principles” [7]. The term “community” during a LIC applies to the professional healthcare set up which includes the primary care team and the local secondary care hospital staff, and also extends to the broader community hosting the longitudinal placement, such as the rural patient population and the voluntary social organisations involved in community health [8]. There is an expectation that medical students immerse and develop a strong sense of belonging in their communities during LICs [9]. Learners enrich their social networks through repeated interactions with community members; thereby fostering connectivity which is a powerful enabler of student agency and learning within LIC [10]. It is also well-established that the level of students’ engagement depends on communities providing a positive experience and a sense of belonging [11]. This reciprocal relationship between LIC students and their host community influences the student experience which is vital to reinforce the workforce shortages, another key objective of these programmes.

There have been concerns regarding primary care workforce shortages in the UK particularly in remote and rural areas; this together with educational success of LIC placements internationally has encouraged the UK medical schools to endorse the LIC model with contextual adaptation [12]. The majority of community programmes in the UK have been amalgamative clerkships (LIC-A) due to peculiarities in demographics, geographies, student profiles and structure of health systems [13]. The Dundee-LIC (DLIC) is the UK’s first comprehensive LIC-Cluster C [14], which means that it spans over the entire duration of the academic year and there are no discipline-based rotations. The present study was undertaken as a part of the Masters dissertation by the first author, who is a teaching fellow at University of Dundee (UoD), under the supervision of the second author. The study aimed to research DLIC alumni’s perceptions of transitioning into a traditional rotational clerkship model in an urban tertiary care hospital after a rural LIC experience. However, there appeared to be immense enthusiasm to share details of the DLIC experience, and the study participants persistently used their LIC experiences as frames of reference when queried regarding the ongoing hospital placements. This manuscript represents only a sub-set of the original research results, and the findings related to LIC to traditional rotational clerkship transition will be shared in a separate paper. Student perceptions gathered in this study rendered unique insights into the role of the local community in making DLIC a successful learning experience for them. It is important to understand the factors involved in students’ perspectives, to further guide and expand these community placements given that many of these programmes are still in their infancy. Here, we analyse student transcripts that

highlight the perception of the community and its contribution towards the DLIC experience, and present the key themes generated. This paper aims to explore the attributes of the local community that impact student experience and learning during a rural LIC.

Methods

Research Context

Most of the evidence regarding student experience during LICs is from North America and Australia due to long-standing, well evaluated programmes running there. DLIC is the UK's first comprehensive LIC (Cluster-C as per Worley's typology discussed above), and several UK medical schools are now invested in the development of comprehensive programmes. As per the recent scoping exercise undertaken by the Imperial College [12], at least nine of the 37 UK medical schools offer LIC-style programmes. Our research context is the Dundee-LIC programme, which was introduced in 2016, as an elective strand in the fourth year of the 5-year long undergraduate medical course at the UoD. The aim of this curricular intervention was to enable students to participate in comprehensive patient care, and simultaneously enhance students' interest in primary care and rural practice. DLIC placements are offered in General practices (GP) in Scottish rural settings, and students follow patients through various healthcare venues including GP, emergency department and other secondary care clinics, public health areas as well as patients' homes in the assigned community [14]. There was clear rationale for purposive sampling since, the aim of the study was to explore the lived experience of DLIC alumni who were final year medical students when the research was carried out. There were only eight out of a cohort of 160 final year students who had undertaken DLIC in their penultimate year, owing to it being a relatively new and optional programme. All the eight potential participants were sent a study invitation by the medical school administrator to avoid possible coercion, as the principal researcher has an educational role in UoD School of Medicine. The UoD school ethics committee granted ethical approval (SMED REC Number: 148/18) for the research and the researcher relinquished any role in student assessments for the academic year. Voluntary informed consent was obtained from the consenting five participants who were assured that data would be presented cumulatively such that no individual student could be identified.

Data Collection

Five interested DLIC alumni shared their experiences through written and audio diaries (AD) over a period of 1-2 months (February 2019- April 2019). Longitudinal narratives have the

potential to capture a vivid picture of participants' lived experience; they overcome reliance on retrospective accounts and increase immediacy and accuracy of data capture [15,16]. Previous literature confirms ADs as a convenient and time-efficient tool, both for the participants as well as researcher in qualitative studies [16,17]. However, finding privacy to record without interruptions, and lack of researcher control over content selectivity in reporting are known possible challenges of this method [18,19]. Even as some qualitative researchers have expressed doubts that participants rehearse their reflections before submission, most maintain that ADs allow access to unfiltered student accounts due to minimal cognitive processing prior to audio-recording [15,16]. The researchers in the present study anticipated that longitudinal narratives would illuminate the DLIC alumni's thought process and sense-making. Students uploaded the diaries on to a secure UoD dropbox (online repository) to which only the researchers had access to.

The issues narrated in diaries were explored in-depth in individual semi-structured interviews with each of the study participants. These were arranged shortly after AD submissions to maximise recall, and took place at a time and place as per the participant's convenience. A preliminary analysis of the narratives received, generated cues for developing the interview prompts. It must be borne in mind that the original focus of this study was on the transition from LIC to traditional hospital clerkship, and this formed a significant part of the interview guide. An individual schedule was designed for each participant with questions that explored (i) the transition experiences (ii) the differences between the two clerkship experiences with respect to learning environment, community attributes, feedback and learner engagement (iii) barriers encountered and support requirements from the medical school (iv) specific issues narrated in the diaries from the individual participant requiring further exploration/clarification (v) consensual validation on relevant subjects raised by other participants. Iterative study technique was adopted where questions in subsequent interviews were modified and expanded depending on the participant responses in preceding interviews.
Triangulation of data from ADs and that from interviews cross-examined the integrity of student responses and illuminated any blind spots in data capture ensuring credibility and quality. It also allowed development of ideas and detection of any changes in participants' thoughts with the passage of time.

Data Analysis

All AD recordings and interviews were fully transcribed manually by the researcher which aided familiarisation and deep engagement with the data. During the preparation of this

manuscript, the transcripts were read in parts and whole several times with particular attention to the sections describing participant experience with various community elements during DLIC. These sections of the transcripts served as raw data to be analysed using a thematic constructionist approach as described by Braun and Clarke [20]. Despite the small sample size, numerous diaries and lengthy interview scripts contributed vast and rich data to allow generating meaningful categories and themes. Iterative analysis involved close interaction between the researcher and the text, with the researcher rereading the scripts to check their sense-making against the participants' actual words. Directories of relevant phrases were compiled to support related themes, which were organised to establish any interrelationships. The analytic commentary presented as results below endeavours to translate the themes into a narrative account, with adequate evidence through the collection of elaborate exemplars to demonstrate the understanding of participants' lived experience.

Results

Five of the eight DLIC alumni identified through purposive sampling expressed an interest to take part (participant rate 62.5%); their demographic characteristics are depicted in Table 2.

Participants submitted narratives over a period of 1-2 months. It was decided to allow flexibility to students in the mode of narrative submission. This was on request as one student struggled with finding privacy to make voice-recordings without interruptions, and another was not comfortable with audio-recording but was happy to type their thoughts. These were deemed genuine concerns by the researchers who felt that allowing flexibility would enhance data capture. UoD BOX folder received a total of 21 diaries- 12 audio and 9 written. The length of ADs varied from 1 minute 20 seconds to 7 minutes 35 seconds. Table 3 provides the number and type (written versus audio) of diaries contributed by the participants.

Experiences and thoughts shared in the longitudinal diaries guided the researcher to probe issues in semi-structured interviews in detail. The length of the individual interviews ranged from 52 minutes to 105 minutes with an average of 73.4 minutes (Standard deviation $\pm$ 21.04). There appeared to be an ongoing enthusiasm to speak about the LIC experience as 3 of the 5 interview sessions exceeded the intended period of 60 minutes. All these participants indicated that they were happy to continue with the interview.

Data analysis of diary and the interview scripts revealed the role of local community in enriching their DLIC experience. Students' accounts led to identification of two key factors-

inclusivity and *familiarity owing to continuous longitudinality* which contributed to their learning as well as enhanced student experience. Both of these attributes involved the following interacting themes that acted independently and synergistically to illuminate the role of professional and broader community that hosted these DLIC placements. Extended student quotations have been selected on basis of representativeness to confirm that the study results are equivalent to participants' experiences. The student quotation labels "M" and "F" are used for male and female respectively, followed by participant identity number, "N" and "I" signify narrative and interview respectively being the source of the quotation, followed by page and line numbers.

Inclusivity

Student accounts in the study revealed how the inclusivity that they perceived during their interactions at various levels- the immediate GP healthcare team, the local district general hospital (DGH) staff and the wider local rural community gave a pleasant feel to students. This was especially cherished as these learners were placed in a remote, unfamiliar and rural environment for an extended period. Alongside improving the student experience, it also positively impacted their learning as highlighted in the quotations below.

GP healthcare team

According to study subjects, the entire healthcare team in GP took ownership to ensure a fruitful learning experience and proactively afforded suitable opportunities to advance their clinical experience. This included their main supervisor, the other GPs in the practice and the wider team which included healthcare professionals such as practice nurses, physiotherapists, pharmacists, midwives and radiographers in some of the bigger practices.

F3-I 13, 1-4: *"My tutor was really good, she would prompt people and she would remind people..in morning meetings and you know ..Remember Xxxxx is here..if anyone sees anything, if you see a good clinical sign..ya so that worked quite well!"*

The students were included as members of the team and the practice staff became aware of their learning trajectory including any learning gaps, owing to working together closely. They in turn took collective ownership of providing students relevant opportunities to plug these and overcome the shortcomings, which was appreciated by participants as a very useful learning experience.

M2-I 2, 28-32: *"The entire team was really good. If they had a patient who was particularly interesting, or who was particularly unusual or if they knew that I wasn't very confident in*

taking histories related to one speciality, they would try and find a patient for me to follow up in that speciality. It seemed really good".

Local DGH staff

The study subjects were the 2nd cohort of DLIC initiative and they perceived significant goodwill towards the programme during their visits to the local DGH. Students felt supported by various secondary care staff who afforded flexible opportunities for clinical learning which was appreciated by learners as unique to DLIC. It gave the students an advantage as they were welcomed into the clinical environment to ensure that they received a fruitful learning experience.

M2-I 14, 7-11: *"FY2s in Belford..because we had so much flexibility for DLIC, I could just like time it so that whenever..say they had a night shift, they were happy for me to just help them out in the night shift particularly if there was anything useful for me to see. They would just text me to come to Belford, which was really useful..unusual opportunity..you wouldn't get in many other places at all!"*

Local rural community

As per students' perceptions shared in this study, they enjoyed the experience of staying in a small Scottish town owing to the welcoming and friendly attitude of the rural population towards the DLIC learners.

F1-I 20, 6- 9: *"Where as in a small town in LIC ..part of the good experience was..not only in the GP surgery were you a valued person,..when you went to the shop you were a valued customer, for you were one of their few regular customers".*

The wider community outside the healthcare setting also appeared to embrace the Dundee students and together shouldered the responsibility of making the young learners comfortable as illustrated in the quotation below. Study subjects shared how they were made to feel at home and how the entire community joined hands to ensure that students' learning related and also other basic needs were met appropriately.

F1-I 11-12, 24-4: "*And again its that inclusiveness, its not just "I will show you around the practice", its "I will show you around the town", "I will show you where you buy your bread", I*

cant have dairy, so he showed me where I could get soymilk. Its quite a small town, so that kind of all encompassing friendliness. [..] You felt like part of the community, and felt like everyone is on your team. And all staff in the practice, the practice manager helping you with IT, and various contacts you might need. [..] It felt like you had all those people there interested and invested in you".

Diverse non-curricular activities

Student diaries highlighted that the DLIC gave them a holistic exposure to the medical profession due to inclusion in diverse and non-curricular activities such as Christmas dinners, practice lunches, group visits and other social events. Inclusion in the variety of experiences were valued by students as it fostered a feeling of legitimacy in the team, broadened their professional view and aided in developing confidence. The transcript below highlights the appreciation of such sessions by the student, despite them not directly linked to healthcare teaching or contributary towards university examinations.

F1-I 20, 16-31: *"I went to meetings and discussions about the future of general practice [..] There are vacancies in nearly every practice in the region..they are recruiting partners, they just cant get any. I just never really knew that before, and never really cared. We never really hear about workforce planning problems in Ninewells, its not really our jobs..but it was so interesting. [..] the public health concerns..around that. I was telling you about our Thursday morning sessions; one of the weeks we actually ..ended up talking about how it works, [..] it was so interesting to learn..I know it didn't come up in the exams..but still its good stuff to learn".*

Familiarity owing to continuous longitudinality

DLIC attributes shared by students in the diaries and interview scripts revealed that the combination of longitudinality and continuity during the clerkship was critical in enhancing the student experience through immersion in the community. The longitudinal nature of the clerkship together with continuity in place and context, generated a familiarity in the community which was comforting, rendered a deep understanding of patient contexts which fostered confidence, and provided opportunities to obtain meaningful feedback from the healthcare team members which was perceived more useful. Learner accounts highlighted their experience of being part of nurturing teams due to learning relationships with several

members of the team and not just the supervisors; this was credited to the extended length and continuity in DLIC placements.

Comfort in familiarity

Student transcripts indicated how being part of the local community for an extended period bred familiarity which was comforting and reassuring, especially since learners were placed in remote settings, outside the protective university environment. This student drew a contrast between the familiarity during DLIC with the anonymity in a metropolitan hospital, and their appreciation of the former.

F2-N1 1,7-13: *"And even when you went out into the hospital (local DGH), quite often afterwards people sort of knew who you were. Ahmm which is I think something very rare in medical school, and University in general. And something I really benefited from..because..ahmm I suppose I needed quite a lot of reassurance..and I was really nervous about coming into a clinical environment".*

The diaries submitted by DLIC alumni during their traditional clerkship in the final year highlighted the contrast; where the lack of continuity in learning relationships is perceived as demotivating.

M1-N1 2, 17-20*: "No one knows your name and it is challenging each time to introduce yourself and be keen and active..and try to get most out of the experience..where as in LIC you were known by name,people were interested in you and wanted to teach"*

Familiarity with patient context

As per study participants, the continuity for a lengthy period during DLIC afforded opportunities to follow patients through the course of their illness. The study subjects were placed in GP surgeries that catered to small rural populations, and lengthy placements in the same location allowed multiple consultations with the same patient. This is reported as leading to better understanding of disease pathways, as well as aiding in holistic patient-centric care in a community setting.

F2-N6 1, 4-25: "*The continuity that you get..of patients over a period of time. So when I was in GP for 10 months last year, I did feel like..there were quite a lot of patients that you got to see several times..you got to fully see a story come to an end. And..or investigate a patient..for as much as he is investigating..see them back again…find out what happened*

with him when they go to secondary care.[..] which is one of the things I loved about the clerkship.. was getting that continuity with patients in primary care".

The immersion in the healthcare community as well as patient community led appreciation of individual patient context and diverse cultural factors in health conditions.

M1-N4 1, 9-13: *"Cases I have known in depth..I have seen with multiple health professionals, I have seen the.. functioning of the NHS, I have been able to appreciate the different backgrounds of different patients and their cultural environments they come from, seen the patient in the context of their environment".*

Familiarity leading to personalised feedback opportunities

LIC alumni noted the differences between the feedback they received during the ongoing traditional clerkship in the hospital, from what they received during DLIC year; they perceived the former as comparatively generic and less useful compared to the latter which was more personalised and specific. According to the participants, the longitudinality in DLIC contributed towards improving the quality of feedback that they received from their practice tutors and the range of healthcare professionals. Long term associations in GP allowed a real perception of the level of student learning by the supervising team, and consequently the feedback that students received was more personal and specific. This was valued by study subjects universally as it provided opportunities to improve their clinical and professional skills.

F1- I 14, 5-13: *"And the best thing about the feedback is that you are with the same team for the whole year, so they can tell you if they see development or if they feel there has been some sort of issue or ..my tutor was able to say at one point " I have watched you a few times and noticed that your abdominal exam isn't good enough, why don't you watch me do one, and then you can do the next one" and I realised I wasn't palpating deep enough at all. Just things like that, because they are watching you for a period of time, they are not just seeing you on a bad day, its actual feedback from people who know you and know how you work."*

Students highlighted that primary care environment offered a great exposure to a wide range of professionals involved in patient care, and also generated opportunities to obtain constructive personal feedback.

F2-I 12, 13-16*: "The feedback that you get in the clerkship is much better on the whole…because ..I think it's a combination of people who..yes they have got to know you but also have an interest in you doing well. So, it feels like less of a box to tick* [..] *I was in a large practice, so I had feedback from everyone who was there and everyone that I worked with including midwives".*

In the quotation below, the student expresses the nature of the relationship between the practice staff and the student and equates it to that between a parent and a child owing to the long-term association.

F1-I 22, 22-28: *"They can identify things like "well done..you remembered to do this.., you forgot that last week". Its more specific to you, they can see your improvements and comment on them. So that feels more positive. I think its higher quality. I suppose it's the difference between how a parent sees their child as opposed to how somebody sees the child 10 minutes every week would evaluate them".*

Discussion

This qualitative study researched LIC students' lived experiences of participating in a comprehensive rural LIC, which confirmed a strong role played by the professional and the wider community in enhancing the student experience. The participants' accounts indicated inclusivity and familiarity due to immersion in the community as key attributes that influenced their experience positively during DLIC placements. A combination of continuity and longitudinality during DLIC, resulted in formation of synergistic learning relationships with members of the professional community hosting the students. There has been emphasis on relationship building in the range of literature from across the globe, since the LIC model has relationships at its core [10,21]. A reciprocal association between the learner and the community has the potential to enrich student experience through creating a sense of integration into the community, which in turn could be pivotal in the motivation to return to a non-metropolitan clinical practice. Our study illuminates the complex and dynamic interplay of various factors facilitating formation of meaningful bonds with members of the community, and learners undertaking an optional LIC in a Scottish rural setting.

The study findings suggest that inclusivity is a key mediator in enriching student experience, and is strongly related to student motivation and engagement with workplace learning in LIC. This resonates with connectivity described by Roberts et al [10], as a process of relationship building by students across a series of learning spaces both formal and informal, during a

LIC. Informal learning occurs in a much wider variety of settings compared to formal education [22]. There are more opportunities for informal learning in a LIC due to the flexible and immersive nature of the programme; but realising the tacit learning opportunities demands learner agency [23]. Connectivity has been described as a powerful enabler of student agency and learning within a LIC using social learning and workplace learning theories [10]. Inclusivity and connectivity appear mutually linked through promoting student engagement in authentic clinical and social context, as the learners get embedded in the community in a real sense. LIC students in our study valued inclusion in not only the GP team and the local secondary care setup, which made them feel part of the team, but also cherished inclusion in the wider rural community and diverse social activities which made them feel part of the community. There have been reports earlier which confirmed superior learning experience due to immersion in the community out with the workplace [7,10]. Inclusion of learners in non-curricular community activities can create an awareness of complex issues such as integrated healthcare, socio-economic drivers and various health determinants [7]. GP supervisors within a LIC could arrange opportunities for students to build connections with the broader community through advertising and encouraging community outreach drives. Along with relationship building and engagement by students, the social inclusion makes the student experience pleasant, which is vital given the need to address primary care workforce shortages, and an expectation that LIC learners eventually return to work in underserved areas [24].

It has been highlighted in previous literature that longitudinality reduces students' cognitive load due to familiarity in clinical space, resulting in knowledge of the meanings and rituals of the context [5]. The continuous longitudinality in DLIC placements fostered familiarity and enhanced the quality and quantity of interprofessional interactions in the GP and the local DGH team. The longer-term relationships are equated by a student as "how a parent sees their child". There are previous reports of students benefitting from more effective and personalised feedback during LIC placements in comparison to traditional rotational style clerkships [1,25]. The present study adds to the understanding of the mechanisms underlying a superior feedback experience- those being familiarity owing to continuous longitudinality and relationships due to inclusivity extended in the professional community. Thistlethwaite et al [6] highlighted that a longitudinal programme provides an 'immersion' experience when combined with continuity, since the full-time placement results in exclusive engagement in a setting or activity. According to the English proverb "familiarity breeds contempt", but in the LIC scenario familiarity appeared to breed comfort for the learners. Longitudinal experiences together with continuity enable students to enter the patients' clinical and social worlds, allowing them to witness the evolution of the health of patients,

and their families and communities. The familiarity with patients' wider context is known to promote an 'an ethic of caring' as patients and communities started to matter to students [26]. The awareness of local healthcare needs and the development of patient-centredness in students resonates the transformative effect of LICs reported in an Australian rural context [27]. There is some evidence of students valuing and benefitting from the social connection from the UK community programmes, which have been predominantly amalgamative LICs [28,29]. The present study extends understanding of the causal community factors – inclusivity and familiarity in a comprehensive LIC in the UK context. The positive student experience together with better patient related outcomes have important implications for future workforce recruitment and retention [24].

A strength of this study is longitudinal data collection which allowed triangulation in time enabling validation of issues arising in diaries to be confirmed with each of the five subjects in interviews. It may be argued that the diaries were collected during traditional clerkship in final year rotations, and hence the participants' accounts of DLIC were retrospective in nature. However, ongoing hospital rotations in a traditional setup triggered recall of specific DLIC community attributes which were unique in contrast, and these rich accounts were well captured in ADs. They were further consolidated in interviews; the consensual validation enhanced credibility and trustworthiness of findings. It is also noteworthy, that participants were more forthcoming with the information regarding DLIC, even when queried about the final year traditional clerkship or the transition experiences, which was the primary focus of the original research. We may claim that the understanding of the LIC community attributes developed organically, as our interest and analysis was subsequent to the spontaneous and elaborate accounts shared by the participants, despite minimal prompting. However, the modest sample size and the geographical variation in individual placements limits generalisability. There is potential for responder bias given that the subjects self-selected the DLIC strand and the dual role of the researcher. Future research could explore the community related attributes in a larger cohort of LIC students, and in more expansive longer duration qualitative studies. There is potential to research the impact of diverse social activities of the host community on student learning, and undertake interpretative phenomenological analysis of prospective student experiences.

Conclusion:

The study findings highlight the role of the professional and the broader community in facilitating student learning and enriching student experience during a LIC. The results

should be of value to host organisations of a community-based programme and GP supervisors to consider priming the local community to further enhance learner inclusion. This paper extends the explanatory understanding of the enabling LIC affordances and reassures that a LIC in a Scottish rural setting is a robust learning environment.

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