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RESEARCH ARTICLE

Are pharmacy students adequately prepared to work in healthcare teams?

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Abstract

Collaborative practice and integrated healthcare are a key focus of healthcare provision internationally. Key attributes of healthcare teams are well documented in the literature and team-working skills have been incorporated into education standards for undergraduate pharmacy students in the United Kingdom (UK). The aim of this research is to explore pharmacy students' understanding of team-working attributes and their preparedness for their future careers in integrated healthcare teams.

Participants were recruited via convenience sampling and four focus groups were conducted. Thematic analysis identified a number of team attributes including communication, clear roles and responsibilities, team dynamics and leadership. Communication and leadership skills were perceived to be the most important attributes in team-working and it is clear from the findings of this research that, in preparation for future practice, students would like to develop these skills through further exposure to opportunities that are incorporated into the undergraduate degree programme.

Keywords: *Curriculum, Inter-professional Education, Students, Teamwork*

Introduction

Collaborative practice and integrated healthcare are key priorities for healthcare provision internationally (World Health Organisation [WHO], 2018). Delivery of integrated healthcare has resulted in new models of care being implemented that focus on the integration of various strands of healthcare services (WHO, 2016). Integrated health services, and associated integrated health teams, are key to the success of delivering coordinated and seamless care (Frenk *et al*., 2010; Reeves, Xyrichis, & Zwarenstein, 2017) reinforcing the need for healthcare teams to have an increased understanding of the complexities of inter-professional practice to provide high-quality patient care (Reeves *et al*., 2017).

In recent years in the United Kingdom (UK), maximising the role of the pharmacist in the provision of patient care, alongside other healthcare professionals, is considered crucial to optimise medicines usage (NHS England, 2017) and requires pharmacists to be able to work effectively as part of these integrated teams (Public Health England, 2017). Key attributes of healthcare teams are well documented in the literature - these are outlined in Figure 1.

To facilitate the development of inter-professional teams, team-working skills have been incorporated into the General Pharmaceutical Council (GPhC) education standards for undergraduate pharmacy students in the UK. These standards require students to demonstrate they can engage in inter-professional team-working and work effectively within teams (GPhC, 2011) and experience learning associated with inter-professional practice. During their pre-registration training, students should actively engage in multidisciplinary team-working to help

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prepare them to work effectively within teams as they embark on their careers as registered pharmacists (GPhC, 2011). Other regulators of healthcare professionals, including medicine and nursing, have similar requirements in their education standards (Nurse and Midwifery Council, 2010; General Medical Council, 2015; Health and Care Professions Council, 2017).

This research aimed to explore pharmacy students' understanding of team-working attributes and their preparedness for their pre-registration year and future careers in integrated healthcare teams. The analysis is was driven by two research questions:

- What are students' understanding of team-working attributes?
- What opportunities exist in their degree programme to facilitate the development of team-working skills?

Figure 1: Team working attributes

- **Communication:** Effective communication assists in improving inter-professional communication and relationships, breaking down professional barriers, resolving any conflict within teams and promoting innovation (Jackson & Bluteau, 2011; Nancarrow *et al.*, 2013; Kossaify *et al*., 2015; Szafran *et al*., 2018).
- **Understanding of role:** An understanding of the roles and responsibilities of other team members and their scope of practice allows team members to understand how the roles of others are complementary to their own (Sargeant *et al*., 2008; Macdonald *et al*., 2010; Jackson & Bluteau, 2011; Nancarrow *et al*., 2013; Szafran *et al*., 2018).
- **Interpersonal relationships:** Mutual trust, support and valuing other team members' roles positively influences team-working (Jackson & Bluteau, 2011; Nancarrow *et al*., 2013; Szafran *et al.*, 2018). Hierarchies and power differences are seen to have a negative impact on team cohesiveness and team-working (Delva *et al*., 2008).
- **Team structure:** Healthcare teams frequently vary in terms of their 'make-up'. The size of the team, team composition, skills and competencies within the team are identified in the literature as key requirements for an effective team and are influenced by the needs of the patient and the team's remit (Delva *et al*., 2008; Xyrichis & Lowton, 2008; West & Lyubovnikova, 2013).
- **Team processes:** Managing a patient requires knowing how to identify and access the right provider; delegate, share, and transfer care; and address policy differences among organisations (Nancarrow *et al*., 2013; Szafran *et al*., 2018).
- **Shared goal:** Shared goals are seen to make teams more cohesive. These shared goals should be established, understood and supported by all team members (Vyt, 2008; Jackson & Bluteau, 2011; Schroder *et al*., 2011; West & Lyubovnikova, 2013). Achievement of shared goals appears to be more challenging in situations involving multiple agencies (Yerbury, 1997).
- **Leadership and management:** Clear leadership provides teams with clear team objectives, clear direction and management, high levels of team engagement, and team members felt supported, supervised and developed (Jackson & Bluteau, 2011; Bainbridge & Wood, 2013; Nancarrow *et al*., 2013; Kossaify *et al*., 2015; Vestergaard & Norgaard, 2018).
- **Organisational factors:** The environment within which different teams operate can influence team effectiveness. People working across different organisations and referral of patients between team members can lead to gaps in service provision or duplication of services (Boaden & Leaviss, 2000; Vestergaard & Norgaard, 2018). Practical issues, including access to patient records, also impact on team effectiveness and an inter-professional approach (Vyt, 2008).

Method

Study design

A qualitative study involving focus groups was conducted with a convenience sample of 19 students in their third and fourth year of the Master's of Pharmacy programme at a UK Higher Education Institute (HEI) following university ethical approval (14/PBS/004).

Interview guide and patient story

A focus group guide, based on existing team-working literature, was used to explore this area including the purpose and value of teams in patient care, key attributes and their impact on patient care. A patient story, developed from the experiences of practitioners, was also used in the focus groups to prompt discussions.

Participant selection and recruitment

Students in their third and fourth year of study on the Master's of Pharmacy programme were invited, via email, to participate in the research. All participation was voluntary and students were informed about the objectives and purpose of the study prior to agreeing to participate. Written consent was obtained from each participant prior to the focus groups.

Data collection and analysis

Focus groups were organised in a room within the university, at mutually convenient times for the participants, and were homogenous to the students' year of study (third or fourth year). All focus groups were facilitated by the author and participants were asked to provide responses to the questions on the focus group guide. Towards the end of the focus group, the patient story was distributed to participants so they could consider if they wished to add anything further to the discussions. All focus groups were digitally recorded and transcribed verbatim prior to data analysis. Data were anonymised at the transcription stage and was checked for accuracy by another researcher in the research team. Data collection continued until data saturation was achieved as students started to repeat themselves.

A grounded theory approach (Robson, 2011) was adopted to establish emerging themes using NVivo 10 software. Coding was undertaken by the author and all codes were subsequently subjected to peer scrutiny by two colleagues in the research team to ensure appropriateness, consistency, accuracy of codes and dependability of the findings (Gibbs, 2007). Any divergence in coding was discussed within the research team and an appropriate resolution was identified. The research team collectively categorised specific codes into the key research themes that are detailed below.

Results

Four focus groups were conducted and the average duration of the focus groups was 62 minutes (60-66 minutes). The two third year focus groups comprised five and four students respectively, and both forth year focus groups comprised five students. One third of participants were female; one student was a mature student and one student was an international student (outside Europe). As focus group data are the outcome of a discursive process, no quoted material is attributed to any individual respondent, but the year of study is noted. The results are organised in accordance with the two research questions. The first section presents student understanding of teamwork and professional roles; the second section presents curriculum opportunities and suggested developments.

Student understanding of team characteristics

The four themes that related to the characteristics of integrated teams that emerged from the analysis were: communication, clear roles and responsibilities, team dynamics, and leadership.

Communication

Students recognised that communication referred to communicating with a range of different stakeholders including healthcare professionals, patients, carers and other family members. Effective communication was seen as key in ensuring that a team was functional and organised and, that it facilitated effective transfer of patient information between team members. As one group discussed,

> *If there's no communication between members, information is just not going to get passed on.*
>
> [Third-year focus group]

There was consensus that the absence of effective communication could result in key information not being transferred between team members, which could result in confusion over patient care, suboptimal care and possibly errors.

> *If the team aren't communicating properly, it's going to be detrimental to the patient. Things don't get done and there's going to be medication errors.*
>
> [Fourth-year focus group]

The need to adapt communication depending on individual patients, such as those with hearing difficulties, was highlighted across all focus groups. Student discussions focussed on verbal communication and that the UK is a multicultural society, which could result in challenging communication if a patient's first language was not English.

Clear roles and responsibilities

Students expressed that it was imperative that team members understood their roles and responsibilities, as well as those of other team members. In doing so, individuals would know what the expectations of them are, undertake this "agreed" role and ensure that they are suitably competent to fulfil their role. Overall, a better understanding of roles and responsibilities in a team was seen by participants to help facilitate seamless care and minimise delays in patient care.

> *Knowing your own role is the most important because I think until you understand what your role is, you're never going to be able to do your job properly.* [Third year focus group]

Defining roles and responsibilities was generally considered important to prevent a "blame" culture and to foster relationships between individual team members.

Team dynamics

Hierarchies, workload and compassion were discussed across all focus groups. Team hierarchies were seen as a positive factor that help members understand who was "in charge" of a team and allowed everyone to know their place and better understand their role within the team.

> *That's why I was saying hierarchy - then everyone has a status and they know that this is, what I can do with my status.* [Third year focus group]

Compassion for, and an understanding of, the workload and pressures affecting other team members was perceived to reduce conflict in a team and provided a better understanding of what might be hindering an individual to effectively fulfil their role. Also, an understanding of factors that affect team members might facilitate support and changes in the team to help others, which could minimise mistakes.

> *I think it's important… finding out when someone maybe isn't doing as well as they could, or helping each other in that sort of way or taking workload off others if someone is struggling.* [Third year focus group]

Students felt strongly that the attitude of individuals in a team will affect team-working and that compassion had its limits. In particular, effort and laziness of team members were highlighted as issues. This was not seen as related to knowledge and skill, but to an individual's willingness to work and be part of the team. Students did not have sympathy for poor performance. Furthermore, they suggested that individuals who did not engage had a negative impact on the overall performance of a team.

> *Everyone needs to be putting in effort but if someone is lacking then that is obviously going to hold the team behind.* [Third year focus group]

This might lead to inefficient service, mistakes being missed and possible patient harm.

> *You could be missing things, increasing the risk of error to a patient* [Fourth year focus group]

However, students also recognised that lack of effort was not always intentional and good communication could make individuals aware of this and facilitate a change in their performance.

> *I think people sometimes think that they have done enough when maybe others think that they haven't.* [Third year focus group]

> *It goes back to the communication…. It just takes someone to say "look, you know, we kind of need you to step up a little bit and do a bit more".* [Fourth year focus group]

Leadership

There was an overall consensus that leadership was fundamental to a team's effectiveness, however, students viewed leadership in terms of a team leader rather than a sense of leadership across a team.

> [The leader] *is probably the most valuable sort of person in the team in terms of what they can bring to the team.* [Third year focus group]

Students believed the role of the team leader was to *"organise and delegate"* [Fourth year pharmacy student]. They, for example, allocate work, arrange meetings, settle disagreements and make decisions to ensure aims and targets were achieved.

> *You need someone who can, you know, pull it together and make sure deadlines and things like that have been met.* [Fourth year focus group]

> *This person basically arranges the meetings, making sure all the work is done by the other members.* [Third year focus group]

Of particular note is the view of final year students who felt that a leader was someone who "*can see the bigger picture*" and "*look at the strengths and weaknesses or each team member and the skills they can bring forward and use them collectively to complete a goal or task*" thereby bringing "*the best out of everyone*" [Fourth year pharmacy student].

One fourth year group deviated from the idea of an overarching team leader and explored the notion of collective leadership. They felt that some teams could be effective in the absence of a single leader if the individuals making up that team were motivated, had a common aim and were part of a cohesive team.

> *You can have situations where everyone agrees on the same thing. They all know what they want to do with it and they just move forward with it, without a leader.* [Fourth year focus group]

Current opportunities within the curriculum

Students identified a number of teamwork focused teaching and summative coursework activities, including

curriculum-based activities, placements and simulated learning, and assessments.

Curriculum-based activities

In general, students did not feel that they were developing teamwork skills. There was consensus that whilst there were lectures and workshops in the first year of the course with a focus on communication, there was no opportunity to practice these skills through simulated scenarios or in a workplace setting. It was felt that students should be exposed to opportunities to do this in the first year and then build on their skills year on year.

> *In the first year, we go through this, but we didn't really have a real practise of this. Maybe we can start using these* [simulated practice] *a little bit earlier like in the first year. Like repeat in the second year and maybe we can do it well on third year.* [Third year focus group]

Students described how group work was often aligned to a summative assessment and the group focused on achieving the assessment and paid little attention to how they worked together and teamwork skills.

> *Instead of trying to work as a good team they're more worried about the end of this. They need to have a piece of work to show for this and that's how we are assessed.* [Third year focus group]

In particular, students felt that both communication and leadership skills could be developed though curriculum-based activities including lectures, workshops and group work.

> *Maybe have more formal* [teaching] *around developing leadership skills.* [Fourth year focus group]

There was consensus that it would be beneficial to include more opportunities for students to participate in more inter-professional team-related learning activities. Students believed that in doing so, they could develop a greater understanding of the roles of others, and improve their leadership and communication skills.

> *In second year, I did the inter-professional learning with the medical students and… we worked as part of a team then and… we had to work alongside them.* [Fourth year focus group]

> *So we're more comfortable communicating with other healthcare professionals because we've had that interaction.* [Fourth year focus group]

Students suggested that participating in lectures or "question and answer" sessions with other health and social care professionals could improve their knowledge of the roles of others in a team and also help break down barriers between professional groups.

> *Having some guest lectures from you know – I know they are ridiculously busy but a doctor coming in or a GP coming in and them saying how they feel they can be supported by a pharmacist and how they can support the pharmacist and kind of opening up that dialogue right from the word go.* [Third year focus group]

Placements and simulated learning

Students described how placements in community and hospital pharmacies allowed them to see a team in action, where they could witness day-to-day experiences of pharmacists and gain a better understanding of their future role.

> *Hospital placements help, really helped in defining the roles, our future roles as pharmacists especially if it's going to be in hospital.* [Third year focus group]

In particular, final year students felt that the simulated learning sessions that they attend in the third and fourth year gave them an insight into healthcare teams and team-working. Students described how they felt that communication between healthcare professionals also facilitated an understanding of the roles of others and promoted team-working that ultimately would impact on patient care.

> *We work with nurses and medics for the first time so we get an insight into what it is like to work within an actual healthcare team.* [Fourth year focus group]

> *When they realised… we could be of help to them, we started like communicating quite a lot between one another and, you know, that I found was quite good and it was good for them as they realised they had someone else to talk to and they don't just have to rely on themselves to make a decision.* [Fourth year focus group]

Through simulated scenarios, students observed how attributes lacking in a team can impact negatively on team-working and patient care.

> *We've seen time and time again, especially through simulation this year, if teams aren't communicating properly it's going to be detrimental to the patient. Things don't get done. There's going to be medication errors.* [Fourth year focus group]

> *So because nobody was talking to each other the patient could have been given the wrong dose of adrenaline. Things just seem to fall apart if you're not communicating.* [Fourth year focus group]

Increased opportunities to go on more placements, widening the range of activities undertaken at placements, and undertaking more inter-professional workshops or simulated learning were cited in focus group discussions as ways of developing teamwork attributes in undergraduate students.

The challenges and limitations of organising placements and simulated learning were recognised by students and whilst students perceived these to be beneficial activities, they also suggested classroom-based activities that could facilitate the development of attributes.

> *We could have done smaller workshop groups, maybe with one of the nurses coming here or even a few of us going out to one place and having a Q&A.*

[Third year focus group]

Maybe things like this [referring to patient story in the focus group]. *Even then afterwards say like "what did you think? What qualities were useful? What did you do wrong?". Sort of evaluating each others' performance in the team and as a team.*

[Third year focus group]

Assessments

Both the challenges and benefits of teamwork in assessments that involved group work were discussed. The need to work as a team to successfully complete the assessment and gain higher marks was recognised by all students. However, this appeared to be dependent on the individual team members and the relationships between each other.

I think it taught us how to work with different types of people. [Fourth year focus group]

Some students felt that activities requiring effective teamwork gave them an insight into how to manage other team members in the future workplace. The benefits of having a leader in the group to keep the group on track to achieve the aim was seen as key in organising meetings and allocating tasks.

It made us see the importance of having a leader within the team, who kind of needs to take charge. [Fourth year focus group]

Final year students felt that the assessed Observed Structure Clinical Examinations (OSCEs) help them develop communication skills. However, a number of students felt that the OSCEs did not adequately prepare them for communication in practice as they lacked confidence when they needed to communicate with an actual patient or healthcare professionals. Students suggested this was as a result of them communicating with academic staff whom they knew in the OSCEs and therefore did not necessarily reflect communication in real life as a pharmacist. It was suggested that observing a pharmacist communicating with patients, for example during a Medicines Use Review, would be beneficial to their development.

So we do like our OSCEs you know and little things like that but it's not like, it's not the same as when you go out say on placement. You have to talk to a patient and we all panic because we don't have that skill of being able to talk to an actual patient.

[Fourth year focus group]

We don't get the communication of communicating with a complete stranger. [Fourth year focus group]

Discussion

The aim of this study was to explore pharmacy students' understanding of team-working attributes and their preparedness for working in integrated healthcare teams in their future careers. Characteristics and attributes that facilitate effective teams and the function of those teams have been well documented in the literature (Delva, Jamieson, & Lemieux, 2008; Vyt, 2008; Szafran *et al.*, 2018) and students demonstrated an awareness of a number of key attributes.

Throughout the literature, communication has been identified as critical to effective inter-professional team-working (Figure 1) and students had a similar view. Effective communication is part of the indicative syllabus for pharmacy programmes (GPhC, 2011). It is clear from the current research that students see the value of effective communication and want more opportunities to develop this core skill. The overall consensus was that ineffective verbal communication could lead to medication errors, poor clinical care and poor team-working. Communication was seen as the cornerstone to effective team-working.

Furthermore, students did not differentiate between formal and informal communication as described by Youngwerth and Twaddle (2011) and focus group discussions centred on verbal communication. This limited perspective on communication could have been influenced by their education and experiences which may have focused heavily on verbal communication. Exposure to formal communication and information exchange needs to be considered in pharmacy degrees to provide students with a holistic understanding of effective communication. Whilst other healthcare professionals, such as medics and nurses, use the acronym 'SBAR' (Situation, Background, Assessment, Recommendation) to facilitate effective oral communication, this framework is not widely used or taught to pharmacists (ACT Academy, 2018). SBAR facilitates standardised communication and allows parties to have common expectations related to what is to be communicated and how the communication is structured, thereby establishing a culture of quality, patient safety and high reliability. As pharmacists become more integrated into healthcare teams, it is imperative that they also use standardised processes to facilitate collaboration, trust and respect amongst team members and ensure patient safety is not compromised. Incorporation of the SBAR framework into undergraduate training would therefore be advantageous.

Final year students frequently made links between communication and other team attributes including mutual trust, a common aim and understanding of the role of others. In line with previous literature (Xyrichis & Lowton, 2008; Youngwerth & Twaddle, 2011), it was perceived by students that without good communication these aspects of effective teams would not be fully develop and overall team-working would be affected. Final year students could see how communication also allowed them to develop relationships with other team members, with students specifically referring to how communication facilitated team-working and an understanding of the roles and skills of others, both of which are attributes identified in the literature in

association with effective teams (Youngwerth & Twaddle, 2011). Their participation in simulated learning in their final year, whereby students work in inter-professional teams with final year nursing and medical students, provided students with an opportunity to begin to develop inter-professional and interpersonal relationships. This aligns with the findings of Oxelmark and colleagues (Oxelmark *et al*., 2017) who reported that inter-professional simulation-based education enabled students to gain an understanding of the complexities of communication and teamwork, and resulted in an improved understanding of the roles of other healthcare professionals.

Students had a positive perspective on hierarchy. This finding does not appear to be shared by qualified healthcare professionals as research has indicated that hierarchical structures hinder team-working and team cohesiveness (Delva *et al*., 2008). There could be a number of reasons for such a discrepancy. Within the literature, healthcare professionals involved in the research may have been practising for a number of years resulting in a negative experience of hierarchies caused by stifling clinical practice and team development (Delva *et al*., 2008). The support and guidance students perceived hierarchies would provide may not be needed by more experienced healthcare professionals. Whilst there is an increased focus in universities of self-directed learning within universities, students are still learning in a structured and hierarchical environment and, as such, may not consider the possibility that a team may not have a hierarchy and individuals are considered equal.

Published accounts of focus group discussions describe the need for clearly defined roles for team members (Macdonald *et al*., 2010; Schroder *et al*., 2011; Youngwerth & Twaddle, 2011; Bainbridge & Wood, 2013; Nancarrow *et al*., 2013). Role ambiguity and a "purposeful role blurring" is described as "troublesome" by Youngwerth and Twaddle (2011), impeding effective collaboration. Students saw overlapping skills as beneficial in teams as it facilitated a reduction in workload, increased workflow, reduced the patient waiting time, and therefore their overall experience. This work ethos is commonly seen in community pharmacy where pharmacists frequently dispense during busy times to help dispensers manage their workload; most students will have experienced or observed this working practice.

Mutual trust and support has been described in the literature (Institute of Medicine, 2003; Delva *et al*., 2008; Jackson & Bluteau, 2011; Youngwerth & Twaddle, 2011), as key to effective team-working, a view shared by students. However, in contrast to the Institute of Medicines (2003) who describe how trust and respect need to be earned, focus group discussions implied students believed that mutual trust and respect were inherent in teams initially but could be broken by poor team-working (Mitchell *et al*., 2012). This view may be influenced by the group working students undertake. However, students feel they are frequently faced with challenges in the group work including a lack of knowledge and commitment by other team members. It is at this point when problems in the team-working arise that students begin to lose respect and trust in fellow students. This is reflected in the students' views that effort and laziness by other team members affects team-working.

Students recognised that teams contain multiple people with different roles. However, beyond a leader and a hierarchy within a team, they did not recognise the wider aspects of team structures. However, within the literature, the structure of a team, including its size, composition, the skills and competencies of individuals within the team, were identified as key requirements to consider to ensure effective teams (Xyrichis & Lowton, 2008; Bainbridge *et al*., 2010; Jackson & Bluteau, 2011; West & Lyubovnikova, 2013). Students' group work at university takes place generally within small groups of four - six and any practical or real-life experience of team-working is more likely to be a small team working in community pharmacies. Therefore, based on their experiences so far, students may have assumed that teams are generally of a similar size based in one location.

Overall, students felt that university education could facilitate the development of communication, leadership and role understanding. Placement and simulated learning were seen as ideal ways to facilitate this but students felt that classroom-based activities could also help to develop these skills. It is imperative that students are exposed to situations that provide opportunities for patient contact so students can explore the wider needs of patients. A scoping review (Fox *et al*., 2018) supported the inclusion of inter-professional education in the training of healthcare professional students to help them develop the relevant skills to prepare them to participate in inter-professional roles and teams. The inclusion of such opportunities for undergraduate healthcare students is supported by other reports (Thomson *et al*., 2015; Wilson *et al*., 2016).

On completion of the pre-registration year, future pharmacists should demonstrate that they "engage in multidisciplinary team-working" (GPhC, 2011). However, there is little research to date on teamwork curriculum that is currently taught across pharmacy programmes in the UK and how this influences their future roles in inter-professional teams. Further research to explore current team-working syllabi and how this links to the evidence of key team-working attributes is needed.

This study contains a number of limitations. Convenience sampling was used to recruit participants and the small scale of the study limits the generalisability of the findings and may not be representative of a broader cross section of undergraduate pharmacy students.

Conclusion

Students identified a number of key attributes that are considered important if a team is to be effective. Communication and leadership skills were considered the most important attributes in team-working and it was

felt that exposure to further opportunities to develop these skills should be incorporated into the undergraduate degree programme in preparation for their future practice. Placements and simulated learning were recognised as valuable opportunities in which to do this and further placement opportunities will allow students to experience inter-professional team-working that will ultimately help better prepare students for their future roles.

Declarations of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

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