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TITLE: A pilot study to evaluate knowledge of person-centered care (PCC), before and after a skill development programme, in a cohort of pre-registration pharmacists within a large London Hospital (UK).

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Abstract (295 words)

A Person-centred approach to healthcare encompasses personalised care, supporting the individual to recognise their strengths and promote their independence. Pre-registration pharmacists (pharmacy graduates in their training year of practice before qualification), as new practitioners, may need support embedding this in practice.

Objective: To explore knowledge and confidence in person centred care in a cohort of 12 preregistration pharmacists before and after receipt of an in-house pharmacy-focussed skill development programme using qualitative and quantitative measures.

Methods: Two half-day skill development sessions were delivered to 12 pre-registration pharmacists. Assessment forms were completed before and after the skill development sessions, including quantitative data gathering via Likert scales and qualitative, narrative responses, responses were coded and classified into themes. Participants submitted one written reflective account demonstrating use of PCC in medicines-related patient consultations following completion of the skills development programme.

Results: Assessment forms were received from all participants. Self-reported knowledge of PCC improved from the start of the first session to the end of the second session. The average score for the understanding of PCC rose from 6.5 to 9.6 (Likert scale of 0-10) to end of the second session. Qualitative analysis identified five person-centred themes including: actively listening, using open questions, supporting and empowering patients, developing a shared agenda, and encouraging patients to take ownership of their medicines.

Conclusions: Confidence and knowledge increased from the start of session 1 to end of session 2. Analysis of the reflective accounts and themes identified increased knowledge of PCC. This work aligns previous LWNUHT work, which identified that a training programme increased awareness and provided foundation knowledge. A short programme to develop PCC skills was effective in improving PCC knowledge of 12 Preregistration pharmacists. A review of pharmacists' written accounts of their consultations suggests that these skills were integrated into practice.

Key Messages

What is already known on this subject?

- Person centred care is not routinely practiced in clinical consultations
- Pharmacists have an opportunity to engage patients in optimising medicines-related care through person-centred consultations
- Preregistrations pharmacists are unlikely to have had the opportunity to try this in practice

What this study adds

- A skills-based programme was effective in increasing knowledge and confidence of preregistration pharmacists in delivering person centred pharmacy consultations
- This can be delivered as an in-house programme in two half-day sessions

Introduction-

Up to 50% of patients do not take medication as intended, this leads to medication wastage and increased health care utilisation[1]. A person-centred approach to healthcare encompasses personalised and compassionate care, supporting the individual to recognise their strengths and promote their independence.[2] This is an essential component of healthcare and a focus of NHS England's health policy agenda.[3] The World Health Organisation (WHO) states this approach may be the best way to enhance people's health, improving compliance and reducing wastage.[4]

As pharmacy professionals, we have the opportunity to engage patients in discussions about their medication and promote optimal healthcare through medicines. This approach aligns with all four principles of the Royal Pharmaceutical Society medicines optimisation agenda.[5] In particular, supporting principle one which focuses on the patient experience. The medicines optimisation agenda was created to promote understanding of the patient experience as well as the safe and effective use of medicines. Despite recognition of the positive attributes of a person centred approach, a report from services users suggests that incorporation of PCC approaches into routine medical consultations is not universal [6]). The first standard of the General Pharmaceutical Council standards for pharmacy professionals' states pharmacy professionals must provide person centred care. [7]

Within the hospital trust, pharmacists and pharmacy technicians attended a successful 2-day health coaching course in 2016 providing staff with knowledge of PCC using a coaching approach[8]. This course proved to be extremely successful amongst staff; however funding constraints precluded further courses being commissioned. The initial health coaching courses were not offered to Preregistration pharmacists due to the intensity of their training year as well as difficulty in timings. Preregistration pharmacists are pharmacy graduates who have completed a four year degree and are undergoing a mandatory one year supervised training placement, before sitting a national exam to qualify as a registered pharmacist. Pre-registration pharmacists may benefit from PCC skill development to prepare them for their role as registered pharmacists and preregistration pharmacist training varies widely across regions and different pharmacy sectors but seldom includes in depth, dedicated training specifically focused on delivering PCC. An in-house skill development programme focusing on PCC was developed within the hospital trust and offered to Preregistration pharmacists in order to increase knowledge and application of PCC skills in this group of soon-to-be qualified pharmacists.

Aim-

To evaluate the knowledge and application of PCC in Preregistration pharmacists before and after the skill development programme.

Method-

A specific PCC skill development programme was created for the Preregistration pharmacists at the hospital trust; delivered by an expert in health coaching and PCC, (NB). This included pharmacy specific content and some elements from the 2-day health coaching course[5] as detailed below

All 12 Preregistration pharmacists across the hospital trust participated in the skill development programme, which involved two half-day teaching sessions and submission of one written reflective account demonstrating the use of PCC from each pharmacist.

Content of sessions

The first session included an introduction to PCC and models that can be used to tailor consultations including, 'T-GROW'[9] and the 'Four E's[10]. It also included a structure for integrating PCC into patient-facing hospital pharmacy roles such as medicines reconciliation, medicines review, discharge counselling and dispensary consultations. The second session involved discussion of the submitted reflective accounts of PCC

and further teaching to consolidate learning from the first session. This session addressed challenges from practice highlighted by the Preregistration pharmacists. Outline content is presented in supplementary file 1. Details of the consultation structure and content, are provided in a related paper (*submitted separately as advised*) .

Data collection

Assessment tools

Data were primarily collected via completion of a bespoke assessment form (supplementary file 2) before and after the skill development sessions. The assessment form included both fixed choice and narrative questions. Nominal data was generated through fixed choice ("tick box") answers and Likert scales for quantitative analysis. The assessment form was developed through discussion between all authors prior to the first session and reviewed by a lecturer in pharmacy practice with expertise in PCC, (CE). The assessment forms were piloted on 3 pharmacists (2 junior and 1 senior, as all Preregistration pharmacists were to be included in the pilot) and minimal changes were made following feedback. Forms were completed at the beginning and end of the first session and at the end of the second session.
The assessment forms were all anonymous so that individual participants could not be recognised.

The areas of enquiry explored in the assessment form and assessment method are summarised in **table 1** were:

TABLE 1 Assessment form areas of enquiry

Area of enquiry on assessment form	**Method of assessment**
1. pharmacists self-reported understanding of the term PCC	Likert scale from 0-10 where 0 = no understanding and 10 = complete understanding
2. Preregistration pharmacists self-reported understanding of the term PCC	freetext
3. Perceived importance of delivering PCC from Preregistration pharmacists	Likert scale from 0-10 where 0 = no importance and 10 = complete importance
4. Preregistration pharmacists confidence in conducting person centred consultations	Likert scale from 0-10 where 0 = no confidence and 10 = complete confidence
5. Self-assessment of current consultations in terms of PCC	Likert scale from from 0-10 where 0 is not all person-centred and 10 is completely person-centred
6. Perceived enablers to providing person centred consultations	freetext
7. Perceived barriers to providing person centred consultations	freetext
8. Behavioural change techniques taught during undergrad	Fixed choice and free text (none, motivational interviewing, health coaching, four E's method, other (Freetext)
9. Desired outcome from the session	freetext

All Preregistration pharmacists also submitted one reflective account demonstrating the use of PCC in their routine medicines-related patient consultations, before the second session by email, to the programme lead

(NB). The written reflective statements as well as narrative answers from assessment forms were analysed using qualitative techniques. This involved coding the body of data (RS) to identify basic units and categories (open coding) and linking the identified categories to one another (axial coding), which were then used to create themes to finally produce a thematic map. Thematic analysis of assessment forms and reflective accounts generated a coding frame of key person-centred themes. The initial coding frame was developed by RS and cross checked by NB.

Results-

Overview

Assessment forms were received by all attendees (Preregistration pharmacists) for both days (11 at the first session, 12 at the second session), reflective accounts were received from all 12 PR.

Quantitative analysis: evaluation forms

1 Understanding of PCC

This was assessed using both quantitative (Likert scale) and qualitative (narrative questions and reflective accounts) data analysis. There was an overall increase in understanding the concept of PCC between the start and end of the first session, though there was no appreciable change between the first and second session. The average score for the understanding of PCC rose from 6.5 (on the Likert scare of 0-10) at the beginning of the first session to 9.6 at the end of the second session.

3. Perceived importance of delivering PCC

The perceived importance of delivering PCC increased from beginning of the first to the session to the end of the second session, with all but one giving the highest score of 10 on the Likert scale (0 unimportant and 10 very important).

4. Confidence in conducting PCC.

Confidence in conducting person centred consultations increased from the beginning of the first to the end of the second session. The average score for confidence in conducting person centred consultations at the beginning of the first session was 6.0; whereas the end of the second session was 8.3.

5. Preregistration pharmacists' self-assessment of current consultations

Preregistration pharmacists' self-assessment of how person centred their consultations were showed a distinct change from the first to the second session. The average score from the Likert scare increased from 5.2 at the beginning of the first session to 7.8 by the end of the second session.

8. Behavioural techniques previously learnt

From the initial evaluation forms, at the beginning of Day 1, 9/11 preregistration pharmacists who returned forms had been taught health coaching, rising to 11/11 by the end of session 1 and 12/12 at the end of session 2. At the start of session 1, only one preregistration pharmacist stated that they knew about the "Four E" questions also rising to 11/11 by the end of session 1 and 12/12 at the end of session 2. 4/11 knew about motivational interviewing at the start of session 1 rising to 6/11 by the end of session 1 and 12/12 at the end of session 2. Two respondents stated that they had not been taught any behavioural techniques before the sessions and one respondent included person-centred care and role play as "other" at the end of session 2

Qualitative analysis: Evaluation forms and reflective accounts

In response to the open-ended questions (questions 2, 6,7,9) and analysis of the reflective accounts, there were 5 person-centred themes that were derived using the codes; to determine the PRPs knowledge of PCC and use of PCC in their practice.

Thematic analysis of the narrative responses on the assessment forms and reflective accounts generated a coding frame of key person-centred themes. Five person-centred themes that were derived using the codes; to determine the preregistration pharmacists' knowledge of PCC and use of PCC in their practice. Key themes with examples are provided in Table 2 .

Table 2: Key person-centred themes identified from thematic analysis of preregistration pharmacist assessment forms and reflective accounts

Theme	Participant example (session number/reflective account, pre-registration number)
1. Actively listening	*'Patient thanked me for listening to her and taking her say into account.'* (Reflective account, preregistration pharmacist 10) *'Ensuring patients are listened to and their questions are the focus of the consultation.'* (End of session 2, preregistration pharmacist 9).
2. Using open questions	*'A simple open question can address the patient's needs quickly.'* (Reflective account, preregistration pharmacist 5) *'A person-centred approach involves using open questions to determine the patients' needs.'* (End of session 2, preregistration pharmacist 7).
3. Supporting and empowering patients	*'Using a person-centred approach was very useful as the patient was more inclined to listen as they had more contribution to the consultation.'* (Reflective account, preregistration pharmacist 6) *'Making the patient the focus of the conversation and involving them from the beginning using open questions.'* (End of session 1, preregistration pharmacists 4).
4. Developing a shared agenda	*'Getting the patient to lead the consultation.'* (End of session 1, preregistration pharmacist 3) *'Ask the patient what they want to discuss, focussing on their needs. Ensuring a shared agenda is agreed to make sure the patient benefits from the consultation.'* (End of session 2, preregistration pharmacist 11).
5. Encourage patients to take ownership of the medicines	*'We spoke about routine and what could be done to help manage symptoms and help take ownership of health.'* (Reflective account, preregistration pharmacist 8) *'Placing the person at the centre of their treatment and letting them take responsibility for their health.'* (End of session 1, preregistration pharmacists 3)

Discussion

All patient facing pharmacists will need skills in delivering PCC once qualified. Indeed, in the UK, PCC is a set standard for pharmacy professionals by the General Pharmaceutical Council. Despite recognising the merits

of PCC, this is yet to be consistently delivered in clinical practice[11]. The results of this study highlight that Preregistration pharmacists reported understanding of PCC and their confidence to deliver in routine practice increased after the first session. While few Preregistration pharmacists had not been taught any behaviour change before the sessions, most of the Preregistration pharmacists stated that they had been taught about health coaching prior to the sessions. This rose to all Preregistration pharmacists by the end of session two, with the majority also knowing about key questions to use (Four E questions) and more than half knowing about motivational interviewing. Qualitative data analysis provided evidence for the increase in baseline knowledge (rather than importance) of PCC following the sessions; Preregistration pharmacists felt that PCC was important at baseline but lacked an understanding of how to deliver it and the confidence to do so. This finding highlights that there is value to be gained from providing in depth, dedicating training to Preregistration pharmacists about integration of PCC into routine medicines-related consultations.

The reflective accounts provide evidence of the use of the various consultation methods used in PCC (4E's[7] and TGROW[6]). As there is limited data for statistical analysis, it is not possible to identify whether further sessions will embed knowledge and confidence in PCC. This work aligns with other work recently undertaken at the hospital trust, where an evaluation of a recent pilot study on PCC identified that a skill development programme increased awareness and provided foundation knowledge.
Behaviours take time to change and embed into practice[,12,13]. Therefore, though Preregistration pharmacists have demonstrated some understanding of PCC, the ability to maintain PCC requires practice to embed behaviours over the training year. Continued practice-based support may be required to embed learning into daily practice[8].
The objectives of this study were met; knowledge of Preregistration pharmacists was established prior to starting the skill development programme and after both sessions. The reflective accounts also suggested a positive impact of the skill development programme on Preregistration pharmacist knowledge of PCC and confidence to use PCC in practice.

Limitations

Limitations to this work include the use of self-assessment of Preregistration pharmacists. While ideally; objective evaluation would have been preferable, this was the most practical solution for this pilot. The assessment forms were anonymous; however they were completed in the presence of a programme lead which could result in social desirability bias. Another limitation was the small sample size precluding statistical analysis as with the small, fixed number of Preregistration pharmacists across the trust; sample size calculation was not appropriate as it could not be implemented. Lack of patient involvement in design and implementation was also a limitation. The strengths of this pilot was that it involved the use of both quantitative and qualitative data to support analysis and interpretation of results. Future work should include patient satisfaction surveys to determine impact of PCC after consultation with Preregistration pharmacists.

Recommendations-

Further evaluation needs to be conducted to support the findings of this pilot study. This could include other hospital sites with other Preregistration pharmacists undertaking the same programme. The programme should be repeated with the next cohort of Preregistration pharmacists at the hospital trust, improving the programme to attempt achievement of 100% on all standards. An analysis of use of PCC, using a reflective account one month from the end of the preregistration year, could assess whether knowledge has been sustained and inform further training needs and potential improvements to the programme. The next year's cohort of Preregistration pharmacists should have access to a PCC programme during training year.

Conclusion

A short programme to develop skills around PCC was effective in improving knowledge of Preregistration pharmacists in this area which support meeting the GPhC standards for PCC. Reflective accounts suggest that these skills were integrated into practice. The work needs to be validated using a larger cohort across a number of hospital trusts in order to consider this method for Preregistration pharmacists across the NHS.

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