Too far away to work with each other: does location impact on pharmacists' perceptions of interprofessional interactions.

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Introduction

In recent years, the delivery of health services to support quality patient care has seen a shift in emphasis towards interprofessional teamwork underpinned by early and repeated interprofessional education (Barr, Koppel, Reeves, Hammick and Freeth, 2005). In order to effectively utilise the skills of each member of the healthcare team to deliver interprofessional care, an understanding of the respective roles of healthcare professionals (HCPs) has become vital for practitioners and organisations alike (Reeves, Lewin, Espin and Zwarenstein, 2010; World Health Organisation, 2010). Whilst the drive toward interprofessional care has been felt more acutely in secondary care, where the full spectrum of HCPs may be found 'under the same roof', recent moves to prevent patients entering secondary care has resulted in a renewed focus on promoting interprofessional collaboration in the primary sector.

A variety of barriers have resulted in a slower transition to effective interprofessional care in some settings and a stated aim of the Department of Health (2000) is to improve working relationships between healthcare professionals. Such barriers include a lack of communication between HCPs combined with varying understanding of professional roles and preconceptions about different HCP groups (Freeth, Hammick, Reeves, Koppel, and Barr, 2008) that can lead to tribalism. Although reasons for limitations in interprofessional communication are likely to be multifactorial, the geographical separation of HCPs is a further potential contributing factor.

The expanding range of clinical services provided by community pharmacies has increased the potential for pharmacists to interact with fellow HCPs as part of the interprofessional primary care team. However, in contrast to secondary care where the full spectrum of healthcare disciplines are situated within the same building, primary care is generally characterised by distinct premises occupied by one or two professions (e.g. the community pharmacy vs. the GP surgery). More recently, there has been a drive to establish 'Health Centres' where a wider clinical offering is delivered by a

multiprofessional team (Vincent, Batalden and Davidoff, 2011) and a number of community pharmacies have been incorporated into such centres.

Whilst the differing geographical locations ('Space') in which healthcare professionals work and interact is a concept that is currently under-explored, Poland, Lehoux, Holmes and Andrews (2005) acknowledge the likely importance of space on the interaction between HCPs when making patient interventions, stating that effective interventions are only made possible by the 'complex interactions between key personalities, circumstances and coincidences'. The aim of this study was therefore to determine whether the different types of primary healthcare 'spaces' impact on the frequency of interprofessional interactions.

Methods

This study employed a questionnaire to assess the reported frequency of interprofessional interactions between community pharmacists and a range of other healthcare professionals in Wales.

Data collection

A questionnaire was developed based on the desired data: in part 1, demographic data was requested, including whether the pharmacy was attached to another healthcare provider, whilst in part 2 pharmacist respondents were asked to record their perceived frequency of interaction with other HCPs. Twenty-two HCP profiles were identified from the NHS careers website and respondents were asked to indicate the frequency '*which best describes the amount of direct personal interaction (either face to face, by phone or by email)'* that they have with each healthcare team member. A 6-point Likert scale was used with options from 'at least once a day' to 'never'. A free text box was provided to indicate any 'missing' professions. Before dissemination the anonymised two-part questionnaire was reviewed for face validity by a small group of working pharmacists who did not form part of the final sample.

All community pharmacies (n=716) in Wales received the questionnaire; pharmacies were identified from the NHS Wales website (accessed November 2015). Paper copies of the questionnaire were mailed to pharmacies and the principal pharmacist (those working more than 2-days per week) in each pharmacy was asked to complete the questionnaire. A follow-up mailing was sent if no reply was received two weeks after the initial mailing.

Analysis

Data was extracted from returned questionnaires and inputted into IBM SPSS version 20 for statistical analysis. In order to validate the data inputted, a sample of 10% of the inputted data was checked. Following entry into SPSS, descriptive statistics were generated for total frequencies and demographic information. Chi-squared analysis was used to compare data.

Ethical considerations

This study received approval from Cardiff School of Pharmacy and Pharmaceutical Sciences (CSPPS) Research Ethics Committee.

Results

Response rate

Of the 716 questionnaires issued, 443 were returned (overall response rate of 62%). Although the number of pharmacies in each of the seven Welsh Health Boards varies significantly (range 23 – 155) the percentage of pharmacies responding in each Board was consistent (mean 62% $\pm$ 4.9) providing confidence in the generalisability of the results.

Demographics

Of the 443 responding pharmacies, 342 were not directly attached to another healthcare provider, 77 were attached to a GP surgery, 15 to an Optician and 10 to a Dentist. Another 21 were attached to 'other' healthcare providers, which included podiatrists, physiotherapists, district nurses and

chiropodists.

Frequency of interaction between pharmacists and other healthcare professionals

Table 1 compares the frequency of interactions between pharmacists and other HCPs for pharmacies directly attached to GP surgeries and those that are not. The data indicates that when the pharmacy is situated in the GP surgery, there is a statistically significant ($p \leq 0.05$) increase in the frequency of interactions between pharmacists and GPs, health visitors, midwives, community nurses and paramedics. It should be noted that GPs, health visitors, midwives and community nurses primarily work in or from the GP surgery. Paramedics, whilst situated outside of GP surgeries, were also found to have a statistically significant increase in interaction with pharmacists attached to GP surgeries. All other HCPs analysed showed no significant difference in the frequency of communication whether or not the pharmacy was attached to a GP surgery. With the exception of midwives and paramedics, the change in frequency of interaction tended towards an increase in weekly and daily interactions; for midwives and paramedics there were small but significant changes at the infrequent end of the interaction spectrum (never – at least once a month).

Discussion

The notion of 'space' remains under-conceptualised, and has most commonly been explored in the context of a patient's experience of healthcare (Poland et al. 2005). The theory would suggest, however, that when HCPs are divorced by location there is a barrier to such interactions. The results from this study provide the first evidence to support the importance of geographical location on the frequency of interactions between HCPs. We found that those pharmacies directly attached to GP surgeries showed a statistically significant positive shift towards more regular contact with HCPs based within that surgery in comparison to pharmacies that were geographically separated.

Table 1. A comparison of the frequency of interaction between pharmacists and other HCPs depending on whether the pharmacy is attached or unattached to the GP surgery. *(Percentages greater than 5% rounded to nearest full integer)*

Healthcare Professional	Pharmacy location (attached or unattached to GP surgery)	At least once a DAY	At least once a WEEK	At least once a MONTH	At least once a YEAR	Less frequently	Never
HCPs routinely located in the GP surgery that show significant difference between cohorts (p<0.05)							
General Practitioner (GP)	Yes (n=77)	65%	30%	5%	0.0%	0.0%	0.0%
	No (n=365)	32%	50%	16%	1.6%	0.3%	0.3%
Health Visitor	Yes (n=76)	1.3%	18%	34%	18%	16%	12%
	No (n=363)	1.7%	6%	18%	23%	30%	23%
Midwife	Yes (n=76)	0.0%	1.3%	23%	23%	29%	23%
	No (n=364)	0.0%	2.0%	7%	20%	35%	37%
Nurse (community)	Yes (n=76)	32%	40%	21%	7%	0.0%	1.3%
	No (n=364)	7%	38%	33%	13%	6%	3.8%
HCPs routinely located outside of the GP surgery that show significant difference between cohorts (p<0.05)							
Paramedic	Yes (n=76)	0.0%	1.3%	3.9%	16%	17%	62%
	No (n=364)	0.0%	0.8%	0.8%	10%	27%	62%
The remaining professions did not show a significant difference between cohorts (p >0.05)							
Care Home Staff	Dentist	Dietician	Health Visitor	Hospital Doctor			
Hospital Nurse	Hospital Pharmacist	Midwife	Occupational Therapist	Physiotherapist			
Podiatrist	Pre-Reg Pharmacist	Primary Care Pharmacist	Radiographer	Social Worker			
Speech & Lang Therapist	Vet	Other[1]					

[1] = Additional professions highlighted in the 'other' box include the drug and alcohol team (n=9) and community psychiatric nurse (n=5)

There was a degree of specificity to the findings, given we did not see a general increase in the frequency of interactions between pharmacists and HCPs across the board, rather the increase in interactions was seen with those HCPs similarly located in the GP surgery. When physically linked with the GP surgery, the percentage of pharmacists interacting with the GP on a daily basis increased more than two-fold from 32% to 65%. This substantial increase in those interacting on a daily basis was also observed for community nurses (from 7% to 32%). An increased frequency of interaction was identified for other HCPs located within the practice but here increases in the number of pharmacists interacting on a monthly basis was observed with for example 53% of pharmacists interacting with health visitors once a month or more, compared with just 26% when not in the same physical location. For midwife interactions the change was towards the infrequent end of the

spectrum but still saw 24% of pharmacists attached to GP practice interacting with midwives at least once a month or more compared to 9% when not attached.

An unexpected finding was the significant increase in the pharmacist-paramedic interaction when the pharmacist was located in the GP surgery with 21% reporting a once yearly interaction compared to 12%. We hypothesise that the increase in interaction here is a result of more frequent paramedic visits to the GP surgery compared to other community pharmacies. For example, Wrigley et al. (2002) found that over a 9-year period GPs within a single NHS trust either made, or were present for, around 15% of the calls to emergency ambulance services. In addition, a review of paramedic activities in the UK noted that paramedics are increasingly working within GP practices and primary care settings (Woollard, 2006) which may further explain this finding. Critically, the interactions between the pharmacist and any of the remaining HCPs investigated, all of whom are located outside of the GP practice, was not significantly impacted by the physical location of the pharmacist.

This study primarily focused on the frequency of 'direct personal interaction' between HCPs; this included face-to-face, telephone and email communication. Due to the remit of the study these specific pharmacist-HCP interaction types were not individually explored and therefore cannot be defined. Furthermore, the quality and content of each interaction was not measured therefore it is not possible to infer any clinical significance where increased interprofessional interactions were reported. This study gathered data from participants' self-reported perceptions of the frequency of interactions between themselves and other HCPs therefore frequencies may be under- or over- reported compared with actual practice. It is also difficult to determine the nature of the attachment of pharmacies to healthcare professionals, with the potential for different interpretations by participants. Nevertheless some important baseline data has been collected and will form the foundation of further investigations into this under-researched topic.

Concluding comments

This study suggests that housing healthcare professionals in the same physical space increases the frequency of their interaction, thus supporting the recent drive to develop multiprofessional primary healthcare centres distinct from the traditional uniprofessional premises.

Declaration 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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