Original Research

Exploring learning needs for general practice based pharmacist: Are behavioural and influencing skills needed?

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Abstract

Background: Embedding pharmacists in general practice has been shown to create cost efficiencies, improve patient care and free general practitioner capacity. Consequently, there is a drive to recruit additional pharmacists to work within general practices. However, equipping pharmacists with behaviour and influencing skills may further optimise their impact. Key elements which may enhance behaviour and influencing skills include self-efficacy and resilience.

Objective: This study aimed to: 1) Assess general practice pharmacists' self-efficacy and resilience. 2) Explore differences primarily between pharmacists reporting lower and higher self-efficacy, secondarily for those reporting lower and higher scores for resilience.

Methods: All 159 NHS Greater Glasgow and Clyde general practice pharmacists were invited to complete an online survey in May 2019. The survey captured anonymised data covering: demographics; professional experience; qualifications, prescribing status and preferred learning styles. Unconscious learning needs for behavioural and influencing skills were assessed using validated tools: the new general self-efficacy scale (GSES) and short general resilience scale (GRIT). Participants' responses were differentiated by the lowest quartile and higher quartiles of GSES and GRIT scores, and analysed to identify differences.

Results: The survey was completed by 57% (91/159) of eligible pharmacists; mean age 38 (range 24-60) years; 91% were of white ethnicity and 89% female. The median time qualified was 14 (1-38) years and 3 (1-22) years working in general practices. Overall pharmacists scored well on the GSES, mean 25 (SD 3; 95%CI 24.4-25.6), and GRIT, mean 30 (SD 4; 95%CI 29.6-30.4), out of a maximum 32 and 40 respectively. A significant positive correlation between GSES and GRIT scores was found (Pearson's r=0.284, p=0.006). However, no significant differences were identified between pharmacists scoring in the lower and upper quartiles by GSES or GRIT. Overall respondents reported their preferred learning styles were activists (46%) or pragmatists (29%). The majority (91%) preferred blended learning methods as opposed to 38% or less for a range of online methods.

Conclusions: General practice pharmacists on average scored highly for self-efficacy and resilience. Higher scores did not appear to be associated with demographic, years of practice, professional or educational experience. Prospective interventions to support those with lower scores may enhance and optimise pharmacists' effectiveness in general practice.

Keywords

Pharmacists; General Practitioners; Patient Care; Delivery of Health Care, Integrated; Family Practice; Adaptation, Psychological; Resilience, Psychological; Surveys and Questionnaires; United Kingdom

INTRODUCTION

There is a significant drive to recruit more pharmacists to work within general practices in the United Kingdom (UK).[1,2] In part this aims to help address the current general practice workforce crisis through new ways of working; freeing general practitioners (GPs) capacity and time by targeting specific prescribing activities: hospital discharge prescriptions, outpatient clinic requests, and other medicines issues e.g. addressing medicines shortage issues by providing alternatives, medicines information, etc.[3] For over 20 years, specially trained pharmacists have worked within general practices and alongside GPs to optimise prescribing and improve patient care. This has included delivering patient-level face-to-face polypharmacy reviews; achieving and delivering prescribing cost efficiencies; ensuring appropriate prescribing (e.g., patients with left ventricular systolic dysfunction, chronic obstructive airways disease); tackling difficult areas of prescribing as non-medical prescribers (that is prescribers who are not doctors) such as inappropriate anxiolytic or hypnotic prescribing,.[4-9]

In 2015 however, the Scottish Government announced the details of the Primary Care Fund to support primary care services, including GPs, and improve patient access to primary care services.[1] This has led to a significant increase in the number of pharmacists working with general practices. The majority of whom are employed by National Health Service (NHS) in Scotland, and complete their regional mandatory training and induction, and start the NHS Education for Scotland general practice training prior to working with general practices.[10] However, existing training does not include behaviour and influencing skills; such as greater self-awareness and 'soft skills' that can enable adaptability, and have positive effects on persuasion, conflict resolution, and communication skills.

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Previous research demonstrates that pharmacists trained in, and using, behaviour and influencing skills as part of GP education and facilitation models, have achieved positive sustainable changes with statin and antidepressant prescribing.[6,7] Two potential key unconscious elements of behaviour and influencing skills include self-efficacy and resilience. Self-efficacy, or perceptions of one's own abilities, is a core component of Bandura's Social Cognitive Theory.[11] In brief, Bandura's Social Cognitive Theory outlines that individuals' are capable of altering behaviour and environment through their perceived self-efficacy or belief in their abilities. Bandura's model suggests that people are more likely to engage in tasks or activities that they feel confident and competent doing and avoid those they do not. For individuals, the greater their sense of self-efficacy the greater their effort, persistence and perseverance they invest and commit to tasks and activities. Previous studies have also indicated that self-efficacy represents an important predictor of resilience, with resilience characterised as the ability to withstand, recover, learn from difficulties and continue despite blocks to progresses.[12,13] Therefore identifying pharmacists with low self-efficacy and/or resilience could be useful in targeting and supporting those that may not engage or whom struggle with tasks and activities.[14] Moreover, addressing training gaps and supporting and growing individual's to increase and improve their self-efficacy may enhance service performance and delivery, as well as their wellbeing.[13-15]

Therefore this study aimed to: 1) Assess general practice pharmacists' self-efficacy and resilience. 2) Explore differences primarily between pharmacists reporting lower and higher self-efficacy, secondarily for those reporting lower and higher scores for resilience.

METHODS

Study design

On consultation with the West of Scotland Research Ethics Service this study was deemed not to require ethical approval as it related to service improvement and evaluation, primarily undertaken to support pharmacists' development and to optimise normal patient care. However, we sought participants consent to participate prior to completing the questionnaire.

This study applied a cross sectional survey design, and utilised an online website based Webropol questionnaire specifically designed, tested and developed to elicit response from general practice pharmacists. Participants were recruited and employed within one large health board area in Scotland, in May 2019.

The UK's National Health Service (NHS) is taxpayer funded and devolved to the national assemblies and parliaments in the home nations. The NHS in Scotland is organised into 14 regional health boards serving a population of 5.3 million people; living in highly rural to highly urbanised areas with large variations in socioeconomic deprivation. NHS Greater Glasgow and Clyde (NHSGGC) provides healthcare services for a diverse population of approximately 1.2 million people across a varied urban area containing 235 general practices across six Health and Social Care Partnership (HSCP). The HSCP brings together community primary care health services and social work services to support patients in the locality, with each HSCP containing pharmacy teams working with general practices within the locality.

Data collection and tools

All 159 NHSGGC's general practice pharmacists were invited to participate through an email from their HSCP lead pharmacist. The email briefly outlined the study, provided a link for the online Webropol questionnaire and requested that participants completed within a 2 week timeframe. After the first week a reminder email, containing the same information, was sent to all practice pharmacists. The Webropol questionnaire included a study information sheet, and consent form which required completion prior to participants being allowed to progress and complete the questionnaire. Participants' anonymised data were captured and included: demographics (age, gender and ethnicity); professional experience; postgraduate qualifications; active or inactive independent prescriber status; preferred learning style - as measured by the learning styles questionnaire; and preferred learning method using a 5 point Likert scale from 'not favoured to favoured' (Table 1).[16]

Previous literature informed the assessment of behavioural and influencing skills, of which self-efficacy and resilience are two inter-related potential key elements. To our knowledge previous studies involving pharmacists have been limited to pharmacist students and academics;

Table 1. Definitions of learning styles and methods	
Item	**Definition/Description**
Learning style	
Activist	Learn by doing and through participation
Pragmatist	Learn through practical tips and techniques from an experienced person
Reflector	Learn by watching others and tend to think before action
Theorist	Learn by understanding theory very clearly
Learning method	
Face to face learning	
Blended	A mix of lecture and interaction/collaboration
Classroom	Lecture style
Intense mentoring	One to one intensive mentoring/support e.g. shadowing
Small group	Small group based learning
Online learning	
Audio visual	Video
Computer based online	Learning package
Self-directed	
Text	

although, two large studies involving nurses working in secondary care across a range of disciplines has also identified similar associations between self-efficacy and resilience.[12,17-20] These constructs were considered as unconscious learning needs for behavioural and influencing skills and were assessed and captured using validated tools embedded within the questionnaire: the new General Self-Efficacy Scale (GSES), and resilience from the Short General Resilience Scale (GRIT).[17,21,22] These tools were also consider appropriate, within the demands of routine clinical practice, as they are self-reported, self-administered and take less than 5 minutes to complete.[21,22]

Statistical analysis

Anonymised data from the Webropol questionnaire were collated centrally using Microsoft Excel, and further analysed using SPSS version 25. Primarily, participants were categorised into two groups according to their total GSES score by quartile; lowest quartile (quartile 1) group score being ≤23 and >23 for upper group (quartile 2 to 4). Secondarily, participants were categorised into two groups according GRIT scores; lowest quartile ≤27 and upper group >27. Due to the small number of participants (n=9) scoring in the bottom quartiles for both measures, further analysis was considered inappropriate. Parametric and non-parametric statistical tests were applied where appropriate as guided by data viability. In particular where continuous data were non-normally distributed and remained so after transformation appropriate non-parametric tests were applied.

RESULTS

Of the 159 general practice pharmacists eligible to participate, 57% (91/159) responded and completed the survey. The participating pharmacists had a mean age 38

Characteristics	Lower quartile (Quartile 1, n=23)	All higher quartiles (Quartiles 2 to 3, n=68)	Total (n=91)	Test p-value[a]
Table 2. Pharmacist demographics and preferences; categorised by self-efficacy quartile scores				
Gender, Female (%)	22 (96)	59 (87)	81 (89)	
Age, mean (SD), [range]	37 (7) [29 to 53]	39 (9) [24 to 60]	38 (9) [24 to 60]	t-test p=0.253 n/s
Ethnicity, Caucasian (%)	22 (96)	61 (67)	83 (91)	
Professional experience				
Years qualified as a pharmacist, median, [range]	10 [4 to 32]	15 [1 to 38]	14 [1 to 38]	Mann-Whitney p=0.326
Years as a general practice pharmacist, median, [range]	3 [1 to 19]	3 [1 to 22]	3 [1 to 22]	Mann-Whitney p=0.228
Previous work experience (%)				df=2, cs=0.469 p=0.469
Community	19 (83)	58 (85)	77 (85)	
Community locum	14 (61)	35 (51)	49 (54)	
Other (hospital, locum hospital, educational, academia, etc.)	11 (48)	48 (71)	59 (65)	
Independent prescriber (%)[b]				df=1, cs=0.52 p=0.637
Yes – Active	13 (56)	45 (66)	58 (64)	
No	9 (39)	21 (31)	30 (33)	
Postgraduate qualifications: attained or studying for (%)				df=1, cs=0.004 p=0.949
Any level	12 (52)	36 (53)	48 (53)	
Postgraduate qualifications: attained or studying for (%)				df=2, cs=0.264 p=0.876
Certificate	5 (22)	11 (16)	16 (18)	
Diploma	8 (35)	21 (31)	29 (32)	
MSc to PhD	6 (26)	19 (28)	25 (27)	
Learning styles and methods				
Preferred learning style (%)				df=1, cs=1.601 p=0.205
Activist	8 (35)	34 (50)	42 (46)	
Pragmatist	11 (48)	15 (22)	26 (29)	
Reflector	4 (17)	13 (19)	17 (19)	
Theorist	0 (0)	6 (9)	6 (7)	
Preferred method of learning: Most favoured and favoured (%)				df=7, cs=2.001 p=0.959
Blended learning	20 (87)	63 (93)	83 (91)	
Small group: face to face	19 (83)	57 (84)	76 (84)	
Intense mentoring	15 (65)	53 (78)	68 (75)	
Classroom	14 (61)	41 (60)	55 (60)	
Computer based online	11 (48)	27 (40)	38 (42)	
Audio visual online	6 (26)	26 (38)	32 (35)	
Online self-directed	6 (26)	19 (28)	25 (27)	
Online text	6 (26)	12 (18)	18 (20)	
Self-Efficacy and resilience				
General Self-Efficacy Score (GSES), mean (SD) [range]	22 (1) [17 to 23]	26 (2) [24 to 32]	25 (3) [17 to 32]	t-test p=0.008
General Resilience scale (GRIT), mean (SD) [range]	28 (4) [20 to 35]	31 (4) [21 to 38]	30 (4) [20 to 38]	t-test p<0.001

a. Test carried out between lower quartile (quartile 1 GSES ≤23) and other higher scoring quartiles (quartile 2 to 4, GSES >23)
b. Small cell sizes removed, as per CONSORT reporting guidelines. Therefore number may appear different, e.g. inactive prescribers not included in table.
SD: standard deviation; cs: chi-square; df: degrees of freedom

Characteristics	Lower quartile (Quartile 1, n=23)	All higher quartiles (Quartiles 2 to 3, n=68)	Total (n=91)	Test, p-value[a]
Table 3. Pharmacist demographics and preferences; categorised by resilience quartile scores				
Gender, Female (%)	20 (87)	61 (90)	81 (89)	
Age, mean (SD), [range]	39 (9) [24 to 58]	38 (9) [25 to 60]	38 (9) [24 to 60]	t-test p=0.970
Ethnicity, Caucasian (%)	22 (96)	61 (90)	83 (91)	
Professional experience				
Years qualified as a pharmacist, median, [range]	13 [1 to 33]	15 [2 to 38]	14 [1 to 38]	Mann-Whitney p=0.668
Years as a general practice pharmacist, median, [range]	4 [1 to 22]	3 [1 to 21]	3 [1 to 22	Mann-Whitney U-test p=0.974
Previous work experience (%)				df=2, cs=0.656 p=0.720
Community	18 (78)	59 (87)	77 (85)	
Community locum	14 (61)	35 (52)	49 (54)	
Other (Hospital, locum hospital, educational, academia, etc.)	17 (74)	42 (62)	59 (65)	
Independent prescriber (%)[b]				df=1, cs=3.304 p=0.069
Yes – Active	11 (48)	47 (69)	58 (64)	
No	11 (48)	19 (28)	30 (33)	
Postgraduate qualifications: attained or studying for (%)				df=1, cs=0.004 p=0.949
Any level	12 (52)	36 (53)	48 (53)	
Postgraduate qualifications: attained or studying for (%)				df=1, cs=2.322 p=0.0127
Certificate or Diploma	5 (22)	28 (41)	33 (36)	
MSc to PhD	8 (35)	17 (25)	25 (27)	
Learning styles and methods				
Preferred learning style (%)				df=2, cs=2.071 p=0.355
Activist	8 (35)	34 (50)	42 (46)	
Pragmatist	9 (39)	17 (25)	26 (29)	
Reflector or Theorist	6 (26)	17(25)	23 (25)	
Preferred method of learning: Most favoured and favoured (%)				df=5, cs=3.083 p=0.687
Blended learning	22 (96)	61 (90)	83 (91)	
Small group: face to face	18 (78)	58 (85)	76 (84)	
Intense mentoring	13 (57)	55 (81)	68 (75)	
Classroom	12 (52)	43 (63)	55 (60)	
Computer based online	11 (48)	27 (40)	38 (42)	
Audio visual online, Online self-directed or online text	7 (30)	36 (53)	43 (47)	
Self-Efficacy and resilience				
General Self-Efficacy Score (GSES), mean (SD), [range]	24 (3) [17 to 29]	25 (3) [20 to 32]	25 (3) [17 to 32]	t-test p<0.001
General Resilience scale (GRIT), mean (SD), [range]	24 (3) [20 to 28]	32 (2) [29 to 38]	30 (4) [20 to 38]	t-test p<0.001

a. Test carried out between lower quartile (quartile 1 GRIT ≤28) and other higher scoring quartiles (quartile 2 to 4, GRIT >28)
b. Small cell sizes removed, as per CONSORT reporting guidelines. Therefore number may appear different, e.g. inactive prescribers not included in table.
SD: standard deviation; cs: chi-square; df: degree of freedom

(range 24 to 60) years; 91% identified as being of white ethnicity and 89% were female (Table 2). The median years qualified was 14 (1 to 38) years and 3 (1 to 22) years working within general practices. The majority (n=77) had previously worked for community pharmacy prior to their current role within general practice. Approximately two thirds (n=58) were active independent prescribers and approximately half had completed and attained postgraduate qualifications.

The respondents scored highly for self-efficacy (GSES mean of 25 (SD 3; 95%CI 24.4-25.6) and GRIT mean of 30 (SD 4; 95%CI 29.6-30.4), out of a maximum 32 and 40 respectively. No significant differences were identified between the characteristics of the pharmacists categorised in the lowest quartile and the higher quartiles by self-efficacy (Table 2) or resilience (Table 3). A significant positive correlation was identified between GSES and GRIT scores (Preason's r=0.284, p=0.006), indicating that increases in self-efficacy correlated with increases in resilience (Figure 1).

Of the 91 respondents, less than half (46%) reported that their preferred learning style was activist, followed by pragmatist (29%) and reflector (19%) with the least preferred option being theorist (7%). The pharmacists ranked their preferred learning methods, in descending order, as blended learning (91%) and small group – face to face learning (84%), with less than 42% of respondent preferring computer-based online methods; dropping to a third (32%) and less favouring different online learning methods. There were no significant variations in preferred learning styles or methods between younger and older pharmacists.

DISCUSSION

In this study general practice pharmacists working with general practices scored highly for self-efficacy and resilience. This study did not identify any significant differences in demographics, professional experience, education, years of employment, preferred learning styles or learning methods between those scoring in the lowest quartile and upper quartiles of either the self-efficacy or
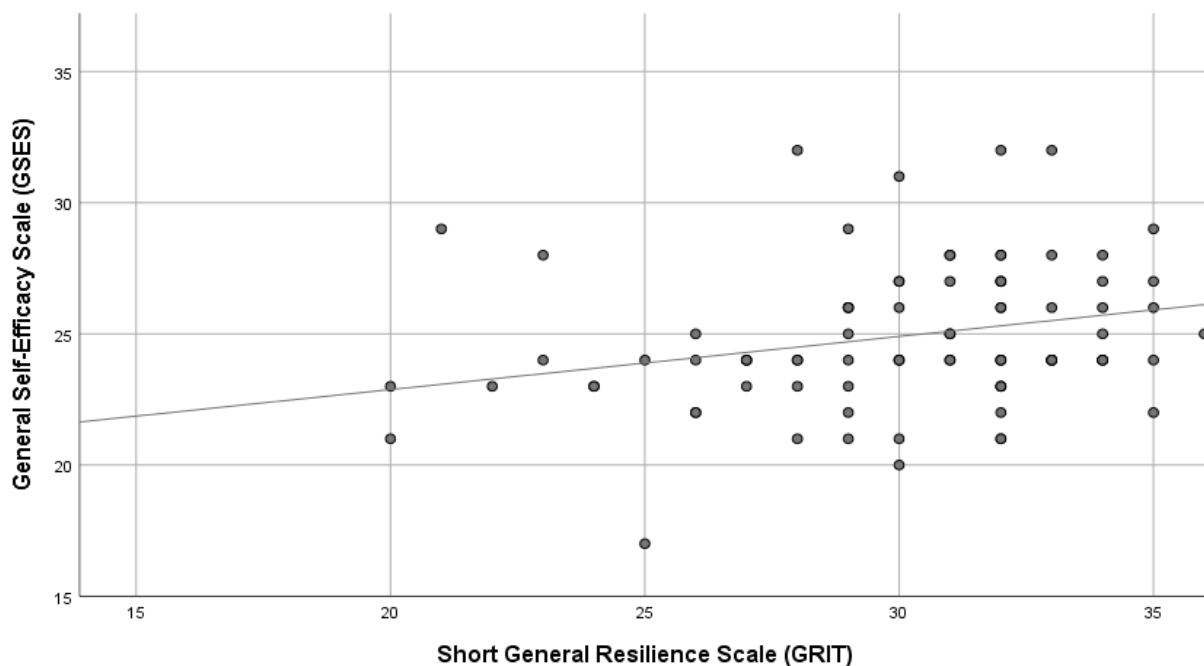
Figure 1. General Self-Efficacy Scale (GSES) and Short General Resilience Scale (GRIT) correlation

resilience scores. However, a positive correlation was identified between self-efficacy and resilience scores for pharmacists working in general practices. The two most preferred learning styles reported by the pharmacists were activist followed by pragmatist, with the majority of pharmacists favouring blended learning methods as opposed to online based learning methods.

Strengths and limitations

The main strength of this study, to authors' knowledge, is that this is the first study to consider, assess and measure general practice pharmacists' self-efficacy and resilience. As such, it may be helpful to others developing training for pharmacists and other multidisciplinary team members supporting general practices and GPs where burnout and work related stress are common.[23-25] Moreover by conducting this study in one large health board there are continuities across the working environments with the same management structures, the same local and national policies and guidelines, as well as having completed similar induction training; involving training and familiarisation in the use of: general practice electronic systems and clinical records; health board clinical guidelines, clinical systems and process; as well as pharmacy services systems, guidelines and prescribing initiatives; although training content and structures have varied over the years, due to changes in local and national priorities such as prescribing cost-efficiencies and the introduction of the new general practice contract in Scotland in 2018 that proposed that all practice would receive more pharmacy support for a greater range of prescribing and clinical activities.[26] This has also lead NHS Education for Scotland to develop national resources to support and enable general practice pharmacists to support GPs to deliver the general practice contract.[10]

Another strength to the authors' knowledge, is that this is also the first study to capture general practice pharmacists'

preferred learning styles and preferred learning method. Exploring learning styles will be of interest to national pharmacy bodies and organisations that develop and implement training resources to support and develop general practice pharmacists.[10,27] Yet another strength was the use of an online questionnaire which enabled a large proportion of pharmacists working in 235 general practices across NHSGGC to participate. Furthermore, online data collection enabled the participation of a large number of pharmacists within a short time period. Nevertheless we acknowledge participants could be motivated to provide socially desirable responses, particularly in self-reported perceptions of abilities, skills and self-efficacy. Online surveys may also introduce potentially biased samples, both due to internet access as well as attracting and collecting 'interested respondent' viewpoints.

Despite the limitations of self-reported methods, our findings that pharmacists scored highly for self-efficacy and that there was a correlation between self-efficacy and resilience are comparable to previous pharmacy and nursing studies the UK and internationally.[17,19,20,28] Although this study focused on pharmacist demographic and professional factors that may potentially be associated with their self-efficacy and resilience scores, we did not include environmental workplace factors which may also have influenced findings, such as general practice dynamics and staffing, or pharmacists' personal or social factors that may influence behaviours such as lack of interest or burnout. Pragmatic resource and methodological constraints prevented exploration of environmental factors, however future research such as interview studies or ethnographic studies may identify new themes and factors that impact the behaviour and training needs of pharmacists.

We also acknowledge that we cannot draw conclusions in relation to time and the observed self-efficacy and resilience correlation due to the cross sectional nature of

our study. Findings that more experienced pharmacists did not score significantly higher on either rating scale is of interest as this runs contrary to a previous primary care study which demonstrated that perceived knowledge, skills, and confidence did significantly increase with time, although this may be due to differences in the measured constructs.[29] In relation to learning styles and methods, although blended methods were preferred and definitions were provided, the terms may have meant different things to different people. Moreover the working style of general practice pharmacists, such as working in professional isolation being the only pharmacist working within a practice may have impacted the findings. Additionally barriers associated with online methods such as the lack of face to face contact, collaborative engagement and social interaction could have influenced findings.[30,31] The cross sectional nature of the survey design did not allow for prospective exploration of pharmacists' perceived self-efficacy and resilience or changes in preferred learning style and methods depending on the problem or issue being addressed. Finally although this study was set in a single urban health board, findings may potentially be generalisable; as the survey population's demographics, professional experience, proportion with postgraduate and independent prescribing qualifications were comparable to a large national study.[28]

Comparison with literature

This study's response rate of 57% is higher than two previous UK studies (42% and 46%), but lower than the 83% achieved in a recent national study in Scotland involving general practice pharmacists.[28,29,32] In part this may be due to different recruitment methods, and commentaries associated with requests to complete such surveys. As pharmacists' roles within general practices continue to evolve, participation in such surveys may help to shape the future of the role and general practices' contractual expectations given the inclusion of pharmacotherapy services within the general medical services contract in Scotland.[26] This study's findings are also in line with large studies conducted in Australia and China, involving nurses working in secondary care where similar associations were observed between self-efficacy and resilience.[19,20] Whereas the nursing study in Australia, as with this study, indicated that age, experience, education and years of employment did not appear to contribute to resilience, the study conducted in China however did find that higher levels of education were associated with greater resilience. Lastly in relation to preferred learning methods, this study's findings that pharmacists preferred blended learning are in line with previous studies in different disciplines and settings.[31,33]

Implications for practice and research

A significant challenge for employers, managers and teams is supporting and enabling staff to be effective in delivering services. By identifying and addressing staff training gaps for pharmacists and others with lower self-efficacy and resilience scores, employers may engage and enable more of their staff and teams to improve team dynamics and service delivery, thereby creating a greater culture of excellence within pharmacy and multidisciplinary teams, as well as enabling and encouraging staff to overcome barriers and challenges within routine practice.[15] However individuals' with lower self-efficacy and resilience may

represent an unidentified minority group.[34] Some of whom may not voice their concerns, as improving one's own self-efficacy may be an unconscious learning need which individual's may require support in identifying. While others may self-identify and have greater self-awareness regarding belonging to a lower self-efficacy group which may negatively impact their productivity and psychological wellbeing; increasing their risk of emotional exhaustion, burnout and potentially avoidable ill health.[23,35] Yet more controversially perhaps, others may argue that potential candidates for advanced pharmacy practice positions should have their self-efficacy and resilience scores assessed and included as part of the recruitment and selection process to ensure that employers can recruit more resilient staff. However, we would encourage pharmacists, trainers, policy makers and employers to consider self-efficacy and resilience when designing general practice pharmacist training schemes and frameworks to enhance and grow individuals' resilience and enhance the overall wellbeing of the pharmacy workforce.[36]

Pharmacists in this study identified and ranked blended learning as their preferred learning method with computer/online based being the least preferred with no clear intergenerational differences associated with a preferred learning method. However, as more postgraduate training and courses are delivered in online formats from tertiary education centres and professional bodies, the online methods may present a barrier or possibly a deterrent to some.[30] Although in relation to evidence based medicine teaching blended learning was no more effective than classroom or online methods for increasing knowledge and skills, but did have a positive effects attitudes and use of learning.[31,37]

Finally, greater self-efficacy and resilience has also been shown to be an important factor associated with academic success and achievement.[18,38] Therefore as continuing professional development is a key component in ensuring a fit for purpose workforce, supporting staff to address and develop their skill gaps - especially for those with lower self-efficacy and resilience – would potentially have a positive effect on their capabilities as well as their careers and wellbeing.

Lastly, although current general practice pharmacist training does not include behaviour and influencing skills; such as greater self-awareness and "soft skills" that can enable adaptability, and have positive effects on persuasion, conflict resolution, and communication skills. Future research should consider exploring the impact that these "softer skills" have on pharmacist-related patient care and service delivery, as well as on key elements such as self-efficacy, resilience and wellbeing. The use of more in-depth qualitative studies to explore pharmacists' experiences and training needs may help to address some of this study's limitations. Future research with sensitivity to behavioural learning needs of pharmacists in general practice may also open up other opportunities to inform strategies to improve service performance and delivery for our patients, as well as the wellbeing of the individual's delivering pharmacy services within general practices.

CONCLUSIONS

General practice pharmacists on average scored highly for self-efficacy and resilience. Higher scores did not appear to be associated with demographic, years of practice, professional or educational experience. Prospective interventions to support those with lower scores may enhance and optimise pharmacists' effectiveness in general practice.

References

1. Scottish Government. Primary care investment: Three-year funding to support front-line community care. 2015; Available at: https://news.gov.scot/news/primary-care-investment (accessed Apr 18, 2020).
2. (NHS England. More than 400 pharmacists to be recruited to GP surgeries by next year. 2015; Available at: https://www.england.nhs.uk/2015/11/pharmacists-recruited/ (accessed Apr 18, 2020).
3. Maskrey M, Johnson CF, Cormack J, Ryan M, Macdonald H. Releasing GP capacity with pharmacy prescribing support and New Ways of Working: a prospective observational cohort study. Br J Gen Pract. 2018;68(675):e735-e742. https://doi.org/10.3399/bjgp18X699137
4. Tan ECK, Stewart K, Elliott RA, George J. Pharmacist services provided in general practice clinics: A systematic review and meta-analysis. Res Social Adm Pharm. 2014;10(4):608-622. https://doi.org/10.1016/j.sapharm.2013.08.006
5. Mackie CA, Lawson DH, Campbell A, Maclaren AG, Waigh R. A randomised controlled trial of medication review in patients recieving polypharmacy in a general practice setting. Pharm J 1999;263:R7.
6. Patel B, Afghan S. Effects of an educational outreach campaign (IMPACT) on depression management delivered to general practitioners in one primary care trust. Ment Health Fam Med. 2009;6(3):155-162.
7. Lowrie R, Lloyd SM, McConnachie A, Morrison J. A cluster randomised controlled trial of a pharmacist-led collaborative intervention to improve statin prescribing and attainment of cholesterol targets in primary care. PLoS One. 2014;9(11):e113370. https://doi.org/10.1371/journal.pone.0113370
8. Johnson C, Thomson A. Prescribing support pharmacists support appropriate benzodiazepine and Z-drug reduction 2008/09 – experiences from North Glasgow. Clin Pharm 2010;3(Supp 1):S5-S6.
9. Johnson CF, Liddell K, Guerri C, Findlay P, Thom A. Medicines reconciliation at the community mental health team-general practice interface: quality improvement study. BJPsych Bull 2019;10:1-7. https://doi.org/10.1192/bjb.2019.42
10. NHS Education for Scotland. Pharmacists working in GP practices. 2016; Available at: http://www.nes.scot.nhs.uk/education-and-training/by-discipline/pharmacy/pharmacists/prescribing-and-clinical-skills/pharmacists-working-in-gp-practices.aspx (accessed Apr 18, 2020).
11. Bandura A. Self-efficacy: Toward a unifying theory of behavioral change. Psychol Rev 1977;84(2):191-215. https://doi.org/10.1037//0033-295x.84.2.191
12. Cassidy S. Resilience building in students: The role of academic self-efficacy. Front Psychol. 2015;6:1781. https://doi.org/10.3389/fpsyg.2015.01781
13. Howe A, Smajdor A, Stockl A. Towards an understanding of resilience and its relevance to medical training. Med Educ. 2012;46(4):349-356. https://doi.org/10.1111/j.1365-2923.2011.04188.x
14. Martin BA, Chui MA, Thorpe JM, Mott DA, Kreling DH. Development of a scale to measure pharmacists' self-efficacy in performing medication therapy management services. Res Social Adm Pharm. 2010;6(2):155-161. https://doi.org/10.1016/j.sapharm.2010.05.001
15. Poppe LB, Granko RP. Managing underperformers. Am J Health Syst Pharm. 2011;68(22):2123-2125. https://doi.org/10.2146/ajhp110074
16. Honey P, Mumford A. The manual of learning styles, 3rd ed. Maidenhead: Peter Honey; 1992. ISBN: 978-0950844473.
17. Pate AN, Payakachat N, Harrell TK, Pate KA, Caldwell DJ, Franks AM. Measurement of Grit and correlation to student pharmacist academic performance. Am J Pharm Educ. 2017;81(6):105. https://doi.org/10.5688/ajpe816105
18. Bailey JG. Academics' Motivation and Self-efficacy for Teaching and Research. Higher Educ Res Develop. 1999;18(3):343-359. https://doi.org/10.1080/0729436990180305
19. Gillespie BM, Chaboyer W, Wallis M, Grimbeek P. Resilience in the operating room: developing and testing of a resilience model. J Adv Nurs. 2007;59(4):427-438. https://doi.org/10.1111/j.1365-2648.2007.04340.x
20. Guo Y, Cross W, Plummer V, Lam L, Luo Y, Zhang J. Exploring resilience in Chinese nurses: a cross-sectional study. J Nurs Manag. 2017;25(3):223-230. https://doi.org/10.1111/jonm.12457
21. Chen G, Gully SM, Eden D. Validation of a new general self-efficacy scale. Organ Res Methods 2001;4(1):62-83. https://doi.org/10.1177%2F109442810141004
22. Duckworth AL, Quinn PD. Development and validation of the short grit scale (grit-s). J Pers Assess. 2009;91(2):166-174. https://doi.org/10.1080/00223890802634290
23. Milam LA, Cohen GL, Mueller C, Salles A. The relationship between self-efficacy and well-being among surgical residents. J Surg Educ. 2019;76(2):321-328. https://doi.org/10.1016/j.jsurg.2018.07.028

24. Dall'Ora C, Griffiths P, Ball J, Simon M, Aiken LH. Association of 12 h shifts and nurses' job satisfaction, burnout and intention to leave: findings from a cross-sectional study of 12 European countries. BMJ Open. 2015;5(9):e008331. https://doi.org/10.1136/bmjopen-2015-008331

25. Doran N., Fox F., Rodham K., Taylor G., Harris M. Lost to the NHS: A mixed methods study of why GPS leave practice early in England. Br J Gen Pract. 2016;66(643):e128-e135. https://doi.org/10.3399/bjgp16X683425

26. The Scottish Government. The 2018 General Medical Services Contract in Scotland. Edinburgh: The Scottish Government; 2018.

27. Royal Pharmaceutical Society. Shaping the future of pharmacy education. 2019; Available at: https://www.rpharms.com/recognition/all-our-campaigns/shaping-the-future-of-pharmacy-education (accessed Apr 18, 2020).

28. Stewart D, Maclure K, Newham R, Gibson-Smith K, Bruce R, Cunningham S, et al. A cross-sectional survey of the pharmacy workforce in general practice in Scotland. Fam Pract. 2020;37(2):206-212. https://doi.org/10.1093/fampra/cmz052

29. Bradley F, Seston E, Mannall C, Cutts C. Evolution of the general practice pharmacist's role in England: a longitudinal study. Br J Gen Pract. 2018;68(675):e727-e734. https://doi.org/10.3399/bjgp18X698849

30. Muilenburg LY, Berge ZL. Student barriers to online learning: a factor analytic study. Distance Educ. 2005;26(1):29-48. https://doi.org/10.1080/01587910500081269

31. Ilic D, Nordin RB, Glasziou P, Tilson JK, Villanueva E. A randomised controlled trial of a blended learning education intervention for teaching evidence-based medicine. BMC Med Educ. 2015;15:39. https://doi.org/10.1186/s12909-015-0321-6

32. Mann C, Anderson C, Avery AJ, Waring J, Boyd MJ. Clinical pharmacists in general practice: Pilot scheme. Independent Evaluation Report: June 2018.

33. Currie K, Biggam J, Palmer J, Corcoran T. Participants' engagement with and reactions to the use of on-line action learning sets to support advanced nursing role development. Nurse Educ Today. 2012;32(3):267-272. https://doi.org/10.1016/j.nedt.2011.03.012

34. Volpato C, Maass A, MucchiFaina A, Vitti E. Minority influence and social categorization. Eur J Soc Psychol. 1990;20(2):119-132. https://doi.org/10.1002/ejsp.2420200204

35. Jetten J, Haslam SA, Cruwys T, Greenaway KH, Haslam C, Steffens NK. Advancing the social identity approach to health and well-being: Progressing the social cure research agenda. Eur J Soc Psychol 2017;47(7):789-802. https://doi.org/10.1002/ejsp.2333

36. Kang K, Ortiz Lopez CF, Fear BS, Granko RP. Tactics to improve resilience and well-being among pharmacy students. Am J Health Syst Pharm. 2019;76(18):1374-1376. https://doi.org/10.1093/ajhp/zxz143

37. Ilic D, Maloney S. Methods of teaching medical trainees evidence-based medicine: a systematic review. Med Educ. 2014;48(2):124-135. https://doi.org/10.1111/medu.12288

38. Dahl JR, Hall AM. A scale to measure pharmacy students' self-efficacy in performing medication therapy management services. Am J Pharm Educ. 2013;77(9):191. https://doi.org/10.5688/ajpe779191