



HEALTH
EDUCATION
& TRAINING

VOLUME 5
ISSUE 1
2022

HEALTH EDUCATION IN PRACTICE

JOURNAL OF RESEARCH FOR
PROFESSIONAL LEARNING (HEPJ)

HETI EDUCATIONAL
RESEARCH & EVIDENCE
BASED PRACTICE



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Health Education in Practice:
Journal of Research for Professional
Learning
Volume 5 | Issue 1 | June 2022

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CONTENTS

EDITORIAL

From the Editor [4](#)
Kichu Nair

RESEARCH & EVALUATION

Development and evaluation of strategies to support rural secondments for junior physiotherapists [5](#)
Gabrielle van Balen, Mitchell Smith, Laura Parish, Ryan Gallagher

Primary care pharmacists' knowledge and perception of primary healthcare professionals' role in managing inflammatory bowel disease: a cross-sectional study in Australia [21](#)
Sharmila S Prasad, Simon Keely, Nicholas J Talley, Kerith Duncanson, Therèse Kairuz, Michael P Jones, Marjorie M Walker

Hospital discharge planning: a qualitative study of new graduate physiotherapists' experiences [43](#)
Romany Martin, Andrew Phan, Shaun Tan, Allison Mandrusiak, Roma Forbes



From the Editor

Prof Kichu Nair¹
Editor-in-Chief

I do hope you are all keeping well and doing the right things to keep healthy and safe. Charity begins at home!

Our team is working hard to improve the Journal and in the near future you will see many innovations. Meanwhile, we have three very interesting articles in this issue.

There is a real shortage of health professionals in our rural areas, with recruitment and retention being major challenges. Workforce shortages are experienced across all health professions, despite rural placements providing golden opportunities, including enhancement of clinical skills. The paper by Gallagher et al. describes the self-reported impact of implementing a framework of proper orientation, induction, and mentorship with targeted upskilling to support junior physiotherapists seconded to rural places. There are lessons to be learnt from this paper that could be applied to all health care professions.

Inflammatory bowel diseases (IBD) are significant causes of morbidity and mortality in Australia. IBDs generate enormous financial burden to the individual and the health care system. Adherence to medication can help patients reduce disease-burden. Pharmacists are one of the most highly trusted health professionals, and patients often rely on them for their expert advice and counselling. Pharmacists may be the first port of call because they are accessible and available, but do they have the required knowledge in IBD management to provide the necessary support? The article by Prasad et al. looks at these issues in depth.

We train our health professional students to have in depth knowledge of their discipline. Commencing clinical practice often highlights gaps in specific knowledge and skills. Discharge planning is a skill that involves many complex issues related to patients and their specific individual contexts. Effective discharge planning requires interprofessional collaboration. In this volume we have an article from Martin et al. exploring the challenges of comprehensive discharge planning and suggests some possible solutions. Maybe we need to revise our curricula?

These articles give us the opportunity to reflect on and refine our current and future approach to health professional education.

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Citation: van Balen, G, Smith, M, Parish, L & Gallagher, R 2022, 'Development and evaluation of strategies to support rural secondments for junior physiotherapists', *Health Education in Practice: Journal of Research for Professional Learning*, vol. 5, no. 1 <https://doi.org/10.33966/hepj.5.1.15619>

Development and evaluation of strategies to support rural secondments for junior physiotherapists

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Abstract

Purpose: *Rural workforce shortages are a national issue. One strategy to address shortages involves using secondments from larger healthcare sites to staff rural sites. Numerous strategies have been proposed to prepare staff for rural practice. This evaluation aims to explore the self-reported impact of the development and implementation of an educational, training, supervision and competency framework package. This will support junior physiotherapists undertaking rural secondments in NSW who are seconded from a large physiotherapy department.*

Design/Methodology/Approach: *Pre- and post-evaluation of the implemented training, education, supervision and competency framework supporting junior physiotherapists undertaking rural secondments across northern NSW. A baseline survey of physiotherapists who undertook a secondment in the previous 12 months defined current practice and limitations. A targeted education, training, supervision and competency framework was developed from this. Post-implementation surveying for 12 months was undertaken to evaluate the package's framework.*

Findings: *Statistically significant improvements were reported by staff. They reported that they felt supported and were aware of escalation processes for patients under their care. Additionally, staff reported improved access to and completing competencies relevant to their secondment.*

Research Implications: *These findings provide evidence for the translation of initiatives to support junior physiotherapists working rurally and the importance of structured education, training and support mechanisms.*

Practical Implications: *These findings support the translation of competency frameworks, structured access to professional development and supervision to successfully support a rural allied health workforce.*

Originality/Value: *These findings support the need for structured and target training, education and supervision for staff undertaking rural secondments. These findings provide evidence that these strategies empower staff with the confidence to work rurally.*

Limitations: *Larger response rates for post-implementation survey results may produce different reported outcomes than pre-implementation results.*

Keywords: physiotherapy, rural practice, clinical supervision

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INTRODUCTION

Rural clinical practice is healthcare delivered in regional and remote locations, and presents challenges for health professionals (including physiotherapists) across Australia (Cosgrave, Maple & Hussain 2018; Keane et al. 2011). Recruitment, retention, access to professional development, professional and social isolation and a wide range of clinical presentations have all been identified as challenges to rural practice (Cosgrave, Maple & Hussain 2018; Keane et al. 2011; Kumar et al. 2020; Lienesch et al. 2021; Struber 2004). Rural health is plagued by staff shortages, with rural areas having 60% fewer allied health professionals per 100,000 people than capital cities (Struber 2004). Physiotherapy registration board data (Australian Health Practitioner Regulation Agency 2020) showed that 18% of physiotherapists worked in regional and remote locations, with negligible change in workforce numbers in the previous five years (Agency 2022). This is exacerbated by high turnover rates, particularly in early career stages (Cosgrave, Maple & Hussain 2018). Rural physiotherapists working in public health settings are likely to be sole practitioners with a generalist scope of practice; however, in rural areas there is a demand for physiotherapists to be multi-skilled to correspond with lower numbers of resident medical specialists and other allied health professionals (Sheppard 2001; Williams, D'Amore & McMeeken 2007).

To address issues of staffing, retention and training strategies, solutions overcoming these barriers have been developed; namely, the development and implementation of clinical competency frameworks, rural recruitment and training pipelines, and the linkage of rural workforces to metropolitan services for staffing, support and training (Durey, Haigh & Katzenellenbogen 2015; Keane et al. 2011).

To address rural workforce shortages in rural northern NSW, the John Hunter Hospital (JHH) physiotherapy department provides a rural secondment program, staffed by junior physiotherapists, to support rural physiotherapy workforce needs across Hunter New England Local Health District (HNELHD). Representing as one of the largest geographical health districts in NSW, HNELHD covers an area larger than England and stretches from Lake Macquarie to the Manning River, inland across the Hunter and New England regions all the way to the Queensland border (HNELHD 2022). Since 2005, physiotherapists employed at JHH between second-year postgraduate to fourth year are required to complete an annual rural secondment as part of their yearly employment contract. Secondment sites vary yearly based on workforce needs across the district. Secondments are typically for a period of three months, with a rural site receiving four secondments per year. The majority of these secondments are to sites with only one physiotherapist.

The total number of annual rural secondments from 2017–2020 ranged from 10–14, as outlined in Table 1. The Remoteness Area rating for these secondment sites ranged from 1–3 (Major Cities to Outer Regional Geographic Areas) (Australian Bureau of Statistics 2018).

Table 1: Number of rural secondments and the number of physiotherapists in their second year of practice per annum

Year	Number of three-month secondments	Number completed by junior staff
2017	14	8 (57%)
2018	10	4 (40%)
2019	10	5 (50%)
2020	11	4 (36%)

It was subjectively identified by seconding physiotherapists that they felt less supported on secondments and reported decreased confidence in decision-making. This was exacerbated when acting as a sole practitioner at a rural site. Additionally, challenges were flagged regarding moving between a large department with readily available senior support to rural sites with limited or no support. This has been associated with self-reported decreases in job satisfaction (O’Sullivan & Worley 2020; Sheppard 2001; Williams, D’Amore & McMeeken 2007).

Based on this feedback, a team of senior and junior physiotherapists from JHH formed and sought to review the current evidence for supporting allied health professionals to undertake rural practice. A rapid evidence review identified a structured competency framework, access to professional development and strong clinical support as reported initiatives to improve allied health professionals’ experience in rural health settings. From this, a redesign of the rural secondment process was launched to identify the experiences of physiotherapists on rural secondment and develop an education, training, support and competency framework supporting the needs of physiotherapists undertaking rural secondments.

The question we sought to answer from this redesign was: does the implementation of an evidence-based, targeted package of professional development, competency framework, senior clinician and administrative supervision improve the self-reported experience of physiotherapists undertaking a rural secondment in HNELHD?

METHODS

A multistage project was undertaken to redesign the support and training provided to physiotherapists undertaking rural secondments. Stage 1 consisted of a baseline survey, aiming to define current practice for rural secondments. Stage 2 developed a training, education and competency framework based on the results of Stage 1 findings. Stage 3 consisted of data collection and monitoring to quantify the effectiveness of these strategies.

It was identified via informal feedback to members of the project team. The feedback revealed that seconded staff felt a lack of clinical support, site orientation and limited skills in the broad spectrum of clinical presentations seen in their confidence to practice rurally. In response, the project team developed a detailed survey focusing on these themes. This was distributed to physiotherapists that had

previously completed a rural secondment. The survey aimed to measure current attitudes on secondments, identify what worked well and areas for improvement. The survey consisted of 22 questions of mixed design. Topics included orientation processes, onsite staff contact frequency and access to clinical and teaching resources.

The survey results were analysed and grouped by common themes and secondment sites. From these results, the project team developed evidence-based strategies tailored to survey responses. Identified strategies were implemented for 12 months before re-surveying secondees over this period to evaluate their impact. Questions from the initial survey were reused for direct comparison and evaluation.

Statistical analysis

Statistical analysis of pre- and post-survey results was undertaken using chi-square tests on the proportion of respondents who responded 'yes' to each question. Thematic analysis of survey responses was undertaken via two team members manually labelling themes identified in text responses. Where noticeable differences occurred in themes identified for responses, a third project member could be asked to determine theme labels. Analysis was undertaken using the R Studio platform and version 4.0.2 of the R programming language (R Studio Team 2020).

RESULTS

STAGE 1: BASELINE CLINICIAN SURVEY

From the baseline survey, 15 responses were received. Surveyed staff provided their preference for frequency and method of contact to guide project direction (Table 2). A copy of the survey used can be found in Appendix 1. Less than half of respondents pre-survey identified that:

- site orientation was adequate
- they felt supported in their role
- they were up-to-date with professional news and developments across HNELHD
- they knew how to access HNELHD professional development while on secondment
- they had undertaken clinical competency assessment relevant to rural practice.

Additionally, respondents were asked to identify how often and by what method of contact would they prefer if a system to improve professional communication and support was developed. Results can be found in Table 2.

Table 2: Contact preferences for offsite staff (pre-survey results)

How regularly did you have contact from offsite staff?	Frequently	2 (14%)
	Occasionally	3 (21%)
	Rarely	6 (43%)
	Never	3 (21%)
Preferred frequency of contact	Weekly	5 (33%)
	Fortnightly	9 (60%)
	Monthly	1 (7%)
Preferred method of contact	Email	9 (60%)
	Phone	7 (45%)
	Telehealth	8 (35%)

Thematic analysis identified the following themes: site orientation, clinical training and clinical isolation. Sub-analysis of clinical training themes identified consistent indications of needing training and upskilling in paediatrics and hand therapy. A small number of respondents also identified maternity and gynaecology.

STAGE 2: TRAINING, EDUCATION AND COMPETENCY FRAMEWORK DEVELOPMENT

Based on these survey results and identified initiatives from published research, the project team sought to develop:

- site orientation manuals and checklists
- a secondment staff buddy system
- a clinical competency framework
- targeted upskilling in specialty clinical areas (paediatrics and hand therapy)
- embedding above strategies into clinical governance.

Buddy System

Surveyed physiotherapists stated feeling isolated with minimal contact. As a result, a buddy system was introduced involving a more senior physiotherapist (who had previously completed a secondment to the rural site) acting as a support person for the seconded physiotherapist. The buddy contacted the seconded physiotherapist fortnightly via email in the first month of the secondment, followed by monthly to provide advice on site-specific matters. The buddy could also be contacted by the rural seconded as required.

Orientation and Manuals

Orientation was viewed as limited by 53% of respondents. Resources were developed and provided to address this site-specific orientation prior to staff commencing a rural secondment. This included a summary of the buddy system, location of orientation material specific to the site, clinical and non-clinical issue escalation frameworks and a suggested list of clinical competencies to complete prior to the secondment.

Each secondment site received a specific electronic orientation manual covering topics such as introduction to site, hours of work, responsibilities, travel, accommodation, network access, contact lists and relevant emergency procedures. This involved standardising and updating or developing all existing secondment site orientation manuals. Staff were notified at the time of these changes, which was also communicated to staff as part of an orientation email sent out prior to each secondment. To support future secondment sites, a template was created to assist with creating new orientation manuals. A contact list for physiotherapists across the health district was collated and shared to streamline interfacility communication for handovers and local clinical escalation.

Clinical Competencies

Prior to completing rural secondment, only 27% of staff members felt they had completed relevant clinical competencies. Senior physiotherapy staff from various clinical backgrounds reviewed existing clinical competency frameworks to identify competencies with the highest rates of use at rural sites. A collaborative approach between project staff and senior physiotherapists (including staff who undertook secondments) defined a list of clinical competencies that should be completed before undertaking a rural secondment. This took into account the expected caseloads and staff profiles at secondment sites. Table 3 provides a list of the competencies identified.

Table 3: Recommended competencies to complete prior to rural secondment

Clinical Competency	Description
Communication and documentation	Effective written and verbal communication and documentation with colleagues, patients and family/carers. Maintains accurate documentation.
Statistics collection	Completes timely and accurate statistics.
EMR training	Completes EMR user training prior to secondment.
Use of supplemental oxygen	Appropriate patient assessment and use of supplemental oxygen when indicated.
Use of standing lifter	Appropriate and safe use of standing lifters.
Stair mobility of the ambulant patient	Conducts safe stairs assessment.
Mobility assessment	Conducts safe mobility assessment.
Respiratory assessment of the medical patient	Conducts appropriate assessment and management of medical patients.
Spirometry	Conducts spirometry appropriately.
Assessment of the geriatric patient	Conducts appropriate assessment and management of geriatric patients.
Neurological assessment	Conducts appropriate assessment of neurological patients.
Application of cervical collars	Application of Miami J/Vista and Philadelphia collars for acute cervical pathology.
Assessment and treatment of general surgery patients	Conducts appropriate assessment and management post-operative surgical patients.
Application of general slabs 1a	Application of short arm, long arm, Spica, short leg and long leg back slabs for immobilisation of acute fractures.

Clinical Competency	Description
Application of general slabs 1b	Application of POSI, equinus and sandwich slabs for acute fractures.
Removal of casts	Removal of back slabs and fibreglass casts.
Application of hinged braces (elbow and knee)	Application of hinged braces (elbow and knee).
Application of a Zimmer splint	Application of a Zimmer splint.
Spinal assessment and treatment	Conducts appropriate assessment and basic treatment of outpatient musculoskeletal spinal presentations.
Peripheral assessment and treatment	Conducts appropriate assessment and basic treatment of outpatient musculoskeletal upper and lower limb presentations.
Application of functional wrist brace	Application of grenace splint.
Use of respiratory device	Ability to understand and demonstrate the use of PEP mask/PariPEP/oscillatory PEP device.
Application of thoraco-lumbar-sacral orthosis (TLSO)	Application of TLSO brace and provision of education for patient and family members.
Assessment and treatment of amputees	Conducts appropriate assessment and basic treatment of amputee patients.
Outcome measures	Utilising and accurately documenting specific outcome measures for patient populations.

A specific competency framework and training program was implemented with senior physiotherapists to ensure competencies were completed prior to rotation. Competency completion included theory and practical components requiring assessment by a senior physiotherapist in a clinical encounter.

Upskilling in Speciality Areas

Working as a sole rural physiotherapist presents the challenge of exposure to unfamiliar occurrences typically seen by specialist/senior physiotherapists at metropolitan sites (O'Sullivan & Worley 2020; Struber 2004). In response to this feedback, formal upskilling opportunities were implemented.

The John Hunter Children's Hospital's physiotherapy department facilitated a paediatric physiotherapy upskilling development day. This included a self-directed education package and a half-day training session. Senior physiotherapists in acute surgery and hands facilitated development days on plaster application and the assessment and management of hands patients.

There was an emphasis during these development days on recognising presentations outside the scope of practice for a seconding physiotherapist. Strategies on how and when to contact more specialised clinicians for advice or to refer further treatment were embedded into development day content. Additionally, internal professional development opportunities, typically delivered face to face, were transitioned online or through a hybrid delivery system, allowing seconded physiotherapists to dial in remotely and participate in ongoing professional development.

Embedding into Routine Clinical Governance

To ensure implemented strategies remain successful, annual review, revision and dissemination of the developed resources and in-services have been embedded into clinical governance for rural secondments within the health district. A short survey was created to be circulated to seconding staff at the end of each secondment to provide feedback and ongoing or emerging issues to be acted on as they arise. Orientation and training resources have been developed and supplemented with policies, procedures and formal approval of training material for use annually.

Paediatric, plastering and hand therapy assessment and management professional development days for rural seconding staff have been annually standardised.

STAGE 3: RESULTS OF DATA COLLECTION

Re-survey of seconded staff occurred for 12 months post-implementation of the training, education and competency framework. Results can be found in Table 4. Occasions of contact with offsite staff were recorded to track compliance and establish the feasibility of the buddy program.

Table 4: Pre- and post-survey results

Question	Pre-survey respondents (n=15) Yes responses	Post-survey respondents (n=7) Yes responses	P-value (95% CI)
Did orientation include:			
Written manual?	6 (40%)	3 (43%)	0.77 (-0.18, 0.12)
Verbal?	13 (87%)	6 (86%)	1 (-0.09, 0.11)

Question	Pre-survey respondents (n=15) Yes responses	Post-survey respondents (n=7) Yes responses	P-value (95% CI)
Tour of site?	13 (87%)	6 (86%)	1 (-0.09, 0.11)
Orientation adequate?	7 (47%)	4 (57%)	0.20 (-0.25, 0.05)
Access to contact lists:			
JHH	8 (53%)	7 (100%)	<0.01 (-0.58, -0.36)
Secondment site	10 (67%)	6 (86%)	<0.01 (-0.31, -0.07)
Physiotherapists within LHD	7 (47%)	5 (71%)	<0.01 (-0.38, -0.10)
Did you feel supported in your role?	7 (47%)	6 (86%)	<0.01 (-0.52, -0.26)
Aware of how to escalate issues if they arose?	10 (67%)	7 (100%)	<0.01 (-0.43, -0.023)
Kept up-to-date with professional news/developments across HNELHD?	6 (40%)	4 (57%)	0.11 (-0.26, 0.03)
Know how to access HNELHD professional development?	7 (47%)	6 (86%)	<0.01 (-0.52, -0.26)
Relevant competencies completed?	4 (27%)	4 (57%)	<0.01 (-0.46., -0.19)

Overall, the project implementation had positive results on several surveyed factors. The number of junior physiotherapists that felt supported in their role increased, with 100% of respondents aware of how to escalate issues if they arose.

Staff felt more prepared to commence rural secondments post-implementation, with 57% of staff members completing relevant competencies prior to secondment, increasing from 27% prior. There was also an increase in the number of junior physiotherapists who knew how to access in-services and educational material. No significant difference was found between pre- and post-survey results in relation to whether orientation was adequate. A greater number of staff were able to access contact lists across the health district, increasing from 56% to 86% after implementation.

Thematic analysis of post-survey responses identified improvements in support while on secondment along with the networking opportunities. However, a theme around orientation to the facility and clinical caseload remained.

DISCUSSION

This work sought to evaluate the self-reported impact of developing and implementing an evidence-based training, competency and buddy system in response to an identified need to better support physiotherapists undertaking rural secondments. The challenges of rural healthcare are well documented, with allied health professionals suggested to be heavily impacted (Brown et al. 2017; Cosgrave, Maple & Hussain 2018). Strategies have been identified over several years to address these, including training pipelines, targeted professional development and professional supervision links (Keane et al. 2011). Through secondments from metropolitan sites, HNELHD has for several years addressed the rural physiotherapy workforce shortages. This, however, represented the first attempt we could identify quantifying the impact of applied evidence-based measures to improve the perceived support, education and ability of physiotherapists providing care in rural settings.

However, the issues faced in rural practice are widely reported across Australia (Francis 2005; O'Sullivan & Worley 2020; Sheppard 2001). Our results may be transferrable to other health services and allied health disciplines faced with these issues, as they exist across all allied health professions. Other allied health professions within HNELHD have been keen to develop similar staffing models used in physiotherapy.

Surveyed physiotherapists identified that rural secondments were a 'great learning experience' that created opportunities to 'build confidence' and 'increase diversity of knowledge'. This supported the overall positive sentiment towards undertaking rural secondments by surveyed physiotherapists. Additionally, we have been able to show that physiotherapists feel more supported when provided with a structured training, education and clinical competency framework. This is significant as it provides evidence of the transferability of these initiatives from previously published research (Lin et al. 2009; O'Sullivan & Worley 2020). Through the implementation of these initiatives, we have been able to show an increased feeling of support and higher levels of confidence, linking to improved workforce retention (Cosgrave, Maple & Hussain 2018).

Reflecting on the project, we have identified limitations that affect the transferability of results. The sample size of clinicians surveyed was limited. The number of staff available for re-survey was limited to those who had completed secondments since changes were implemented. A wider pool of respondents may have resulted in different identified areas needing support and upskill. Differences in the scope of practice between allied health professionals across Australia may also impact the clinical competencies required for rural sites in other areas of Australia.

During this project, several ongoing areas for further development and potential uses have been identified. The scope for the development of additional paediatric training days has been identified. It has also been identified that maternity and gynaecology physiotherapy is an area where benefit in further upskilling prior to undertaking a secondment is warranted.

CONCLUSION

Through comprehensive written orientation manuals, suggested competencies for upskilling, a buddy support program and regular contact from onsite clinicians, seconded staff have reported an increased level of support and therefore confidence to act within their roles while seconded to rural sites. This has corresponded with decreased feelings of isolation and separation from their host site, increasing overall job satisfaction during rural secondments.

Acknowledgements

Damien Smith, Service Manager, John Hunter Hospital & Belmont Hospital Physiotherapy Department.

Funding

No funding was received for this work. All work was completed from in-kind funding from the John Hunter Hospital Physiotherapy Department.

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APPENDIX 1: SITE SURVEY

End of Rotation Rural Secondment Survey

1. Which secondment have you just completed?

- Site 1
- Site 2
- Site 3
- Site 4
- _____ (Other please specify)

2. Did your orientation include the following?

- Written Manual Yes/No
- Verbal Yes/No
- Tour of Site Yes/No
- Clinical handover from previous therapist Yes/No

3. Did you feel the orientation you received was adequate and appropriate?

- Yes
- No

Explain – i.e., what was helpful, what needs to be improved?

4. Did you have access to the following contact lists:

- JHH Yes/ No
- Secondment Site Yes/ No
- Physiotherapists in the Local Health District Yes/ No

5. Did you have access to local shared drives or relevant JHH Physiotherapy shared drives?

- Yes
- No

6. Did you feel supported in your role?

- Yes
- No

If so, how? If not, why?

7. While on rural secondment, were you aware of how to escalate issues if they arose?

- Yes
- No

8. Did you feel you were kept up to date with onsite news?

- Yes
- No

9. Do you know how to access JHH department in-services?

- Yes
- No

10. How often would you prefer to be contacted by onsite staff?

- Weekly
- Fortnightly
- Monthly

11. How would you prefer to be contacted?

- Email
 - Phone
 - Other
-

12. Did you feel you had completed all relevant competencies prior to seconding?

- Yes
- No

If no, what competencies do you feel were necessary to complete prior to your secondment?

13. What do you feel worked well when you were on secondment?

14. Do you have any suggestions for improving secondment rotations? Is there anything that would have made you feel better prepared for your secondment?



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Citation: Prasad, S S, Keely, S, Talley, N J, Duncanson, K, Kairuz, T, Jones, M P & Walker, M M 2022, 'Primary care pharmacists' knowledge and their perception of primary healthcare professional's role in managing inflammatory bowel disease: a cross-sectional study in Australia', *Health Education in Practice: Journal of Research for Professional Learning*, vol. 5, no. 1 <https://doi.org/10.33966/hepi.5.1.15437>

Primary care pharmacists' knowledge and their perception of primary healthcare professionals' role in managing inflammatory bowel disease: a cross-sectional study in Australia

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Abstract

Purpose: *Inflammatory bowel disease (IBD) management is complex and challenging, requiring a multidisciplinary approach. While pharmacists may play a key role as the first point of contact for patients with initial symptoms or disease relapse, there is scant literature on pharmacists' knowledge in IBD management. We conducted a survey exploring pharmacists' knowledge, potential educational needs and their perception of pharmacists and other healthcare professionals' roles in managing patients with IBD.*

Design and Methodology: *An online survey was distributed to pharmacists through professional organisations. The survey included questions about demographic information, concepts related to IBD management, and the roles of pharmacists and healthcare professionals in managing patients with IBD.*

Findings: *Fifty-two respondents completed the survey (response rate could not be determined). The overall knowledge score for the majority of respondents was categorised as 'low' to 'average'. Pharmacists demonstrated the highest level of accuracy in their knowledge scores regarding their understanding of the role and importance of vaccination in IBD (94.2%; n = 49). Pharmacists who had exposure to patients with IBD demonstrated better knowledge scores than those without exposure to IBD patients in their practice (p = 0.005). Further, general practitioners (GPs) were perceived as the key care providers to IBD patients, while pharmacists considered themselves as equally important in providing medication-related information to patients.*

Conclusion: *This study indicated that pharmacists' knowledge of IBD and its management was suboptimal; however, with education and training, there are opportunities for pharmacists to play a more active role in managing patients with IBD.*

Keywords: inflammatory bowel disease (IBD), pharmacist, healthcare professionals, knowledge, perception

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INTRODUCTION

Inflammatory bowel disease (IBD) is a chronic disease affecting the gastrointestinal tract. It usually presents as one of two common forms: ulcerative colitis and Crohn's disease (Gastroenterological Society of Australia 2018; Karimi et al. 2020). Symptoms include chronic abdominal pain, diarrhoea, anaemia, loss of appetite, fatigue, weight loss and extraintestinal complications. IBD is also characterised by cycles of remission and relapse (Gastroenterological Society of Australia 2018; PricewaterhouseCoopers Australia 2013). There is a poor quality of life with a mental health burden affecting patients' personal, social and professional life (Mikocka-Walus et al. 2020). Inflammatory bowel disease is most common among those aged between 15 and 40 years. Although mortality rates are considered low, IBD is incurable and lifelong, further contributing to the economic burden of the disease (Gastroenterological Society of Australia 2018; Karimi et al. 2020).

In developed nations, IBD has a disproportionately high economic burden. For example, in Australia, IBD is responsible for an estimated annual cost of approximately AU\$2.7 billion, with hospital costs nationally in excess of AU\$100 million (Deloitte Access Economics Pty Limited 2007; PricewaterhouseCoopers Australia 2013). Optimal management of patients with IBD requires prevention of disease relapse, maintenance of remission and avoidance of adverse effects along with better quality of life (Georgy, Negm & El-Matary 2019; Massuger et al. 2019). Medication management is the keystone for treating patients with IBD (Gastroenterological Society of Australia 2018; Georgy, Negm & El-Matary 2019). The treatment of IBD has advanced in recent years, making medical therapy more effective; however, it has also become more complex with the use of corticosteroids, immunosuppressants and biological therapies that have risk-benefit profiles that require careful monitoring (Blackburn et al. 2019; Zezos & Panisko 2018).

In a recent systematic review, the authors highlighted the potential opportunities in the management of IBD through proven pharmacist interventions in other chronic diseases, leading to improved patient outcomes, including quality of life, disease management and self-management (Prasad, Duncanson et al. 2020). Understanding such factors will likely lead to better IBD management that maximises therapeutic efficacy and minimises the potential for adverse effects (Massuger et al. 2019). Pharmacists often act as intermediaries between doctors and patients by providing easily accessible clinical advice and medicines without needing a pre-booked appointment (International Pharmaceutical Federation 2019; Manolakis & Skelton 2010). They are generally the initial source of contact for patients with minor gastrointestinal ailments because of the over-the-counter (OTC) medications that can play a critical role in their care (Blackburn et al. 2019). Therefore, engagement of pharmacists provides an opportunity for improving clinical outcomes in a primary care setting (Blackburn et al. 2019; Manolakis & Skelton 2010).

Factors such as gender, pharmacist's age group and familiarity with IBD patients are important in understanding the association on knowledge and perception among healthcare professionals (Carvajal et al. 2013; Janzen et al. 2013). While there is published literature available on knowledge, attitudes and perceptions of healthcare professionals with regards to IBD, the focus is mainly on secondary or tertiary care with a small proportion addressing primary care relating to general practitioners (GPs) (Bennett, Munkholm & Andrews 2015; Crohn's & Colitis Australia 2017; Mikocka-Walus et al. 2014; Tan et al. 2012). No published literature has assessed pharmacists' knowledge and perception of IBD management. A recent study evaluated pharmacists' confidence levels in the care and management of IBD and reported that pharmacists lacked sufficient confidence in managing IBD (Prasad, Keely et al. 2020). To address

this gap, this study's primary aim was to ascertain pharmacists' existing knowledge and educational needs for managing IBD in the primary care setting. A second aim was to explore factors influencing perception(s) of pharmacists as healthcare professionals managing patients with IBD.

METHODS

STUDY PARTICIPANTS

Inclusion criteria for the study were: 1) pharmacists who had completed either a Bachelor or a Master of Pharmacy, 2) registered with the Australia Health Practitioner Regulation Agency (Ahpra), 3) were working in a primary care setting (i.e., a community pharmacy/general practice/clinic and/or accredited to conduct medication reviews) (The Department of Health 2013). Registered pharmacists work in various practice settings and must complete a minimum of 150 hours per year working within a primary or secondary care setting to maintain their registration as a practising pharmacist (Pharmaceutical Society of Australia 2019; Pharmacy Board of Australia AHPRA 2020). The survey was open from August 2019 to April 2020 (terminated due to COVID-19), during which there were approximately 31,503 pharmacists registered in Australia (Pharmacy Board of Australia AHPRA 2020). The data on the number of registered pharmacists working in a primary care setting was not available at the time of the study. Therefore, the sample size required was calculated using a confidence interval for a single proportion, factoring in an anticipated response rate of 15–30% (Charan & Biswas 2013; Phillips et al. 2017). The minimum required sample size was estimated at 49–80 pharmacists with a confidence level of 95% and a 5% margin of error. A response rate could not be calculated due to the lack of available data to determine the exact number of registered pharmacists working in a primary care setting at the time of the study.

Convenience sampling of pharmacists in the Hunter region was the primary recruitment strategy. This was supplemented by snowballing, where participants (pharmacists) who were already enrolled helped promote the study by informing friends and colleagues about the research and directing interested individuals to the researchers. In addition, pharmacists were recruited indirectly through professional organisations (i.e., the Pharmaceutical Society of Australia, Newcastle, the Hunter Valley Pharmacists Association, the Pharmacy Guild of Australia and the Australian Association of Consultant Pharmacy across the broader profession within Australia). The survey could only be accessed and completed via the link provided in the participant invitation information. Completion of the survey by pharmacists were deemed as consent for the study, specified in the participant information sheet included at the start of the survey.

STUDY DESIGN

This exploratory cross-sectional survey study used a questionnaire that was developed from a review of the literature and of systematic reviews relating to pharmacists' role in chronic disease and the management of IBD (Prasad, Duncanson et al. 2020; Prasad, Keely et al. 2020; Prasad, Potter et al. 2020). The questionnaire was piloted for content and faced validity among a sample of 10 healthcare professionals (two gastroenterologists, six pharmacists, one GP and a research physician in the field of IBD). Based on the results of the pilot, the final questionnaire was uploaded to Research Electronic Data Capture (REDCap), a secure web application designed for clinical and translational survey research.

The questionnaire was anonymous, self-administered, delivered electronically and consisted of three domains that took approximately 20 minutes to complete. It included demographic information (e.g., age, gender, previous practice, current practice including a secondary role, qualifications), questions seeking to elicit pharmacists' level of knowledge (20 questions about general concepts related to IBD and specific concepts of IBD management) and perceptions regarding the management of IBD (pharmacists' perception of themselves and of other healthcare professionals).

Pharmacists were assessed for their knowledge about concepts of IBD that ranged from general concepts (i.e., prevalence, age of diagnosis, causes of IBD, inflammation associated with IBD, symptoms and food triggers) to more advanced IBD management concepts (i.e., complications associated with IBD, impact of smoking in IBD, medication usage in IBD that related to contradiction, opioid use, pregnancy, biologics, immunosuppressive agents and types of vaccination in IBD). Individual scores for the participants' level of knowledge were expressed as an average percentage of the maximum possible score (100%). The overall knowledge score was categorised as: 0% deemed not knowledgeable, <25% very low knowledge, 25–50% low knowledge, 51–75% average knowledge and >75% adequate knowledge.

To determine pharmacists' perceived level of confidence relating to IBD, respondents were asked to complete a pre- and post-self-evaluation of five components related to IBD management included in the knowledge domain of the questionnaire. This self-evaluation is based on experiential learning, a holistic educational philosophy by David Kolb based on the individual's experiences influencing their education, learning and understanding of new knowledge (Chamane, Kuupiel & Mashamba-Thompson 2019). Questions were largely formatted as binary (yes/no), multiple choice, 5-point Likert scale responses, ranking and open-ended text. The questionnaire is available on request from the authors. A current practice setting was recorded to differentiate between the principal role (where the pharmacist spent most of their working week) and the secondary role, as some pharmacists are employed at more than one site or in more than one sector. For rigour, strengthening the reporting of observational studies in epidemiology (STROBE) statement was used (von Elm et al. 2007).

STATISTICAL ANALYSIS

Descriptive data were analysed using median with an interquartile range and frequency (%) to describe the demographics of the participants and knowledge concepts in IBD. Free text responses were categorised into correct or incorrect responses to be included in the analysis. Descriptive statistics and non-parametric tests (Mann Whitney U Test/Wilcoxon Rank Sum Test and Kruskal-Wallis) were used to explore difference in scores of pharmacists' perception of their role managing IBD before and after completing the knowledge section. The overall knowledge scores were analysed using frequencies (%). Possible relationships between pharmacists' knowledge of IBD and demographic characteristics were evaluated with Mann-Whitney-Wilcoxon test for two groups and Kruskal-Wallis test for more than two groups. Statistically significant differences were declared at a p-value of less than 0.05. Analysis of the data was performed using Stata version 14 statistical software (StataCorp. Stata Statistical Software: Release 14. College Station, TX: StataCorp LP. 2015).

RESULTS

PARTICIPANT INFORMATION

A total of 52 responses were received between August 2019 and April 2020. The demographic information of respondents is shown in Table 1. The majority of respondents were aged 25–44 years (65.4%, $n = 34$), and more than half were female ($n = 32$, 61.5%). Approximately 71% of respondents had completed a Bachelor's qualification, and 32.7% ($n = 17$) had additional postgraduate qualifications. Regarding the years of experience, having more than 10 years of experience was most common ($n = 23$, 44%). Hours of work had a similar distribution in all three groups.

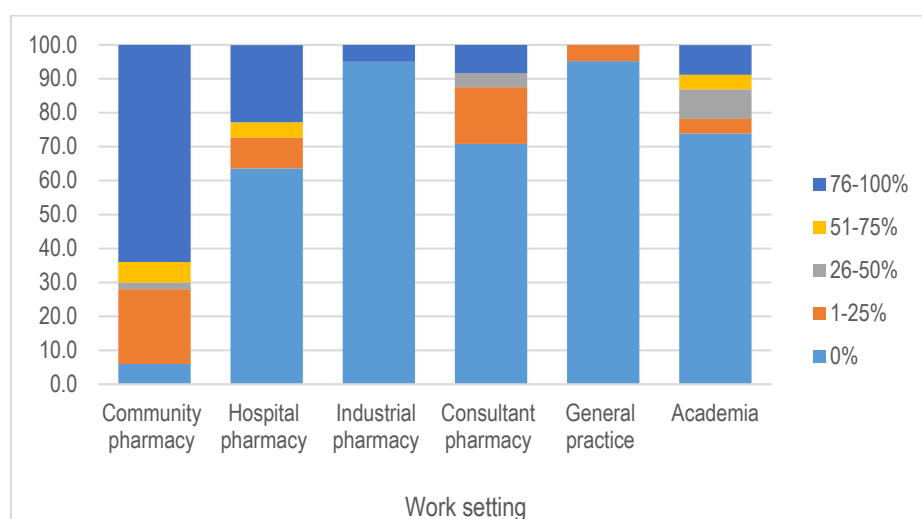
Table 1: Background characteristics of the study participants ($n=52$)

Variables	Frequency (n)	Percent (%)
Age groups (years)		
18–24	6	11.5
25–34	17	32.7
35–44	17	32.7
45+	12	23.1
Gender		
Male	20	38.5
Female	32	61.5
Qualification		
Bachelor of Pharmacy	37	71.1
Master of Pharmacy	15	28.9
Attended postgraduate		
Yes	17	32.7
No	35	67.3
Length of experience (years)		
≤5	15	28.9

Variables	Frequency (n)	Percent (%)
6–10	14	26.9
10+	23	44.2
Length of working hours per week (hours)		
≤29	18	34.6
30–39	17	32.7
40+	17	32.7

There was a variety of reported practice settings. In their principal role, 64% (n = 32) of respondents were employed in a community pharmacy setting, 22.7% (n = 5) in a hospital pharmacy setting, 8.7% (n = 2) in academia, 8.3% (n = 2) as consultant pharmacists, 5% (n = 1) in industry pharmacy and 0% (n = 0) in a general practice setting (Figure 1). As a secondary role, 30% (n = 15) worked in a community pharmacy setting, 20.9% (n = 5) as consultant pharmacists, 17.3% (n = 4) in academia, 13.5% (n = 3) in a hospital pharmacy setting, 4.8% (n = 1) in a general practice setting and 0% (n = 0) in industry pharmacy.

Figure 1. Proportion of time spent in various workplace settings of pharmacists who completed the survey on inflammatory bowel disease (IBD) perceptions and knowledge.



PHARMACISTS' LEVEL OF IBD KNOWLEDGE

Variables such as age, gender, educational levels, length of experience and exposure to patients with IBD were analysed to determine their association with pharmacists' knowledge. Pharmacists had low (median score range: 26–50) to average (median

score range: 51–75) levels of knowledge (Table 2). A statistically significant difference in the overall knowledge score was observed based on the pharmacists' exposure to patients with IBD ($p = 0.005$) in their practice, with no other statistically significant associations identified (Table 2).

Table 2. The association between background characteristics and pharmacists' knowledge of IBD ($n=52$)

Variables	Overall knowledge score* Median (IQR)	P-value
Age group (years)**		
18–24	50.6 (38.1, 52.4)	0.05
25–34	63.1 (58.3, 72.6)	
35–44	70.2 (53.6, 78.6)	
45+	63.1 (51.2, 75.6)	
Gender***		
Male	58.3 (49.4, 73.2)	0.37
Female	63 (53.6, 77.4)	
Qualification***		
Bachelor of Pharmacy	63.1 (42.8, 77.3)	0.86
Master of Pharmacy	63.1 (52.4, 72.6)	
Attended postgraduate***		
Yes	67.8 (54.7, 73.8)	0.31
No	59.5 (48.8, 78.6)	
Length of experience (years)**		
≤5	59.5 (47.6, 72.6)	0.48
6–10	63.1 (57.1, 78.6)	
11+	70.2 (53.6, 77.4)	

Variables	Overall knowledge score* Median (IQR)	P-value
Length of working hours per week (hours)**		
≤29	64.9 (50.0, 82.1)	0.62
30–39	63.1 (54.8, 77.4)	
40+	59.5 (52.4, 71.4)	
Exposure to IBD patients***		
Yes	64.3 (53.6, 77.4)	0.005
No	36.9 (25, 42.8)	

* Medians with an interquartile range were used to present the overall knowledge score by pharmacists' characteristics. Comparison between categorical variables were made by using the Kruskal-Wallis Test (**) or the Mann-Whitney-Wilcoxon Test (***); IBD = Inflammatory Bowel Disease.

Pharmacists who had exposure to IBD patients in their practice scored higher for IBD knowledge (overall score median 64.3) than those without any exposure or experience with IBD patients (overall score median 36.9). There was a statistically significant trend associated with knowledge and the pharmacists' age ($p = 0.05$). Those aged 35–44 years had higher overall scores for knowledge of IBD compared to other age groups (18–24 years, 25–34 years and 45+ years).

Of the 20 knowledge questions, 11 questions (55%) were answered correctly, and one question reported equal responses ($n = 26$; 50%) of correct and incorrect by the respondents (Table 3).

Table 3. Participants' responses to the knowledge questions of the survey ($n=52$)

Topic concepts in IBD	Correct (percentage)
Cause(s) of IBD*	48 (92.3%)
Source of inflammation in IBD	43 (82.7%)
Possibility of a cure in IBD	38 (73.1%)
GI complications	38 (73.1%)
Associated risk of smoking in IBD	18 (34.6%)

Topic concepts in IBD	Correct (percentage)
Food triggers associated with IBD	47 (90.4%)
IBD prevalence	18 (34.6%)
Age of diagnosis in IBD	48 (92.3%)
IBD symptoms	47 (90.4%)
Issues related to extraintestinal complications	18 (34.6%)
OTC medication use related to toxic megacolon	19 (36.5%)
Use of immunosuppressive medications	39 (75.0%)
Contraindicated medications in IBD	21 (40.4%)
Importance of iron supplementation	26 (50.0%)
Drugs in pregnancy**	44 (84.6%)
Opioid use in IBD	43 (82.7%)
Role of biologics in therapy	20 (38.5%)
Colon cancer screening	8 (15.4%)
Vitamin deficiencies	23 (44.2%)
Importance of vaccinations in IBD	49 (94.2%)

Frequency (%) was used to present the level of knowledge of pharmacists; responses were scored as correctly answered = 100% and incorrectly answered = 0%. * Responses were categorised as: 4 correct = 100%, 3 correct = 75%, 2 correct = 50%, 1 correct = 25% and incorrect = 0%. ** Responses were categorised as: 8 correct answers = 100%, 5–7 correct = 75%, 4 correct = 50%, 1–3 correct = 25% and incorrect = 0%; IBD = inflammatory bowel disease; GI = gastrointestinal; OTC = over-the-counter.

The overall knowledge score for the respondents showed that one pharmacist (1.9%) was categorised as has having very low knowledge (score 1–25%); 21 pharmacists (40.4%) were categorised equally as having low (score 26–50%) and average knowledge (score 51–75%); and nine pharmacists (17.3%) were deemed as having adequate knowledge (score >75%). Inflammatory bowel disease concepts that showed the highest level of pharmacists' knowledge included importance of vaccinations in IBD (n = 49; 94.2% correct responses), cause of IBD and age of diagnosis (n = 48; 92.3% correct responses), food triggers and IBD symptoms (n = 47; 90.4%

correct responses), drugs in pregnancy (n = 44; 84.6% correct responses) and source of inflammation and opioid use (n = 43; 82.7% correct responses). Concepts where pharmacists had lower knowledge included colon cancer screenings (n = 8; 15.4% correct responses), risks associated with smoking, prevalence and extraintestinal complications in IBD (n = 18; 34.6% correct responses), OTC medicines associated with toxic megacolon (n = 19; 36.5% correct responses) and place in therapy for biologics (n = 20; 38.5% correct responses).

PHARMACISTS' IBD KNOWLEDGE: PERCEPTIONS AND SELF-REFLECTIONS

A pre- and post-evaluation of changes in perceptions and the related association with demographics was undertaken. Overall, the median sum score for each of the five components showed that pharmacists perceived themselves to be better in four out of the five components (understanding IBD, providing information, providing additional support and addressing patient needs) before taking the knowledge section of the questionnaire when compared to the median sum score of their perception after the knowledge section. As shown in Table 4, educational level (initial or postgraduate qualifications), length of experience and length of working hours per week were not significantly associated with any change in pharmacists' perception regarding their current knowledge. However, there were statistically significant associations between change in pharmacists' perception and age, gender and exposure to patients with IBD (all $p < 0.05$). Pharmacists aged 35–44 years, females and those who had experience with IBD patients perceived themselves as having better knowledge (higher mean scores) prior to completion of the knowledge section when compared to their scores (lower mean scores) after completing the knowledge section.

Table 4. The association between background characteristics and change in pharmacists' perception pre- and post-completion of knowledge section (n=52)

Variables	Overall perception pre-completion of the knowledge section*	Overall perception post-completion of the knowledge section*	P-value
Age group (years)**			
18–24	50 (50, 50)	50 (50, 75)	0.054
25–34	50 (50, 75)	50 (50, 75)	
35–44	75 (75, 75)	50 (50, 75)	
45+	50 (50, 62.5)	50 (50, 75)	
Gender***			

Variables	Overall perception pre-completion of the knowledge section*	Overall perception post-completion of the knowledge section*	P-value
Male	50 (50, 75)	62.5 (50, 75)	0.008
Female	75 (50, 75)	50 (50, 75)	
Qualification***			
Bachelor of Pharmacy	50 (50,75)	50 (50, 75)	0.84
Master of Pharmacy	75 (50,75)	50 (50, 75)	
Attended postgraduate***			
Yes	50 (50, 75)	50 (50, 50)	0.27
No	75 (50, 75)	50 (50, 75)	
Length of experience (years)**			
≤5	50 (50, 75)	50 (50, 75)	0.19
6–10	62.5 (50, 75)	50 (50, 75)	
11+	75 (50, 75)	50 (50, 75)	
Length of working hours per week (hours)**			
≤29	75 (50, 75)	50 (50, 75)	0.09
30–39	50 (50, 75)	50 (50, 75)	
40+	50 (50, 75)	50 (50, 75)	
Exposure to IBD patients***			
Yes	75 (50, 75)	50 (50, 75)	0.044
No	25 (0, 50)	50 (25, 50)	

* Medians with an interquartile range were used to present the overall knowledge score by pharmacists' characteristics. Comparisons between categorical variables were made using Kruskal-Wallis Test (***) or Mann-Whitney-Wilcoxon Test (**); IBD = inflammatory bowel disease.

PHARMACISTS' PERCEPTIONS ON THE ROLE OF HEALTHCARE PROFESSIONALS MANAGING IBD

The section of the questionnaire that related to pharmacists' perceptions on the roles of healthcare professionals in primary care assessed which healthcare professional they thought patients would consult on key aspects of managing IBD; namely, information on IBD management, information on medication use, additional information on IBD and uncontrolled symptoms associated with IBD (Table 5).

Table 5. Pharmacists' responses regarding the healthcare professional best-suited for managing patients with IBD ($n = 52$)

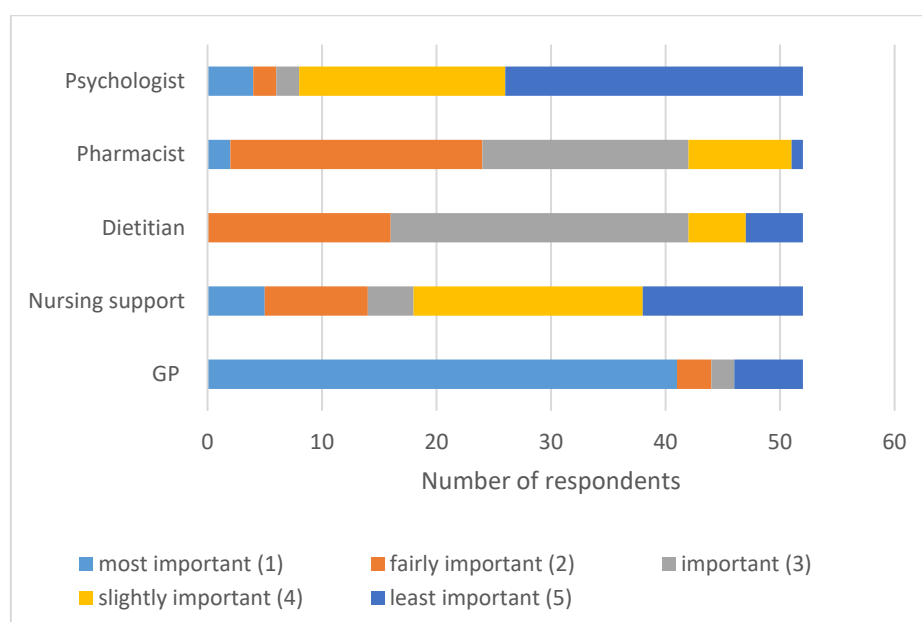
Variable	Frequency (%)
To whom would the patient go for information about managing their IBD?	
General practitioner	39 (75.0)
Nursing support	1 (1.9)
Dietitian	10 (19.2)
Pharmacist	2 (3.9)
To whom would the patient go to for information about medications for their IBD?	
General practitioner	4 (7.7)
Dietitian	1 (1.9)
Pharmacist	47 (90.4)
To whom would the patient go to for additional/supportive information about their IBD?	
General practitioner	14 (26.9)
Nursing support	8 (15.5)
Dietitian	11 (21.1)
Pharmacist	17 (32.7)
Psychologist	2 (3.8)
Who would the patient see when their IBD symptoms are not well controlled?	

Variable	Frequency (%)
General practitioner	47 (90.4)
Nursing support	1 (1.9)
Dietitian	3 (5.8)
Pharmacist	1 (1.92)

IBD = Inflammatory Bowel Disease.

Pharmacists perceived GPs as the most important and psychologists as the least important healthcare professionals in managing patients with IBD. For providing information to patients about managing their IBD, GPs were considered to be the most important (75%), followed by dietitians (19.2%), pharmacists (3.9%), nursing support (1.9%) and then psychologists (0%). Pharmacists were considered most important (90.4%) for patients seeking medication information. When providing additional or supportive information, all five healthcare professionals were perceived to have some importance (32.7% for pharmacists, 26.0% for GPs, 21.1% for dietitians, 15.5% for nursing support and 3.8% for psychologists). For uncontrolled symptoms of IBD, GPs were the most important healthcare professional group (90.4%), and psychologists (0%) were the least important. Overall, pharmacists ranked GPs as the most important healthcare professional in managing patients with IBD, followed by pharmacists, dietitians, nursing support and psychologists (Figure 2).

Figure 2. Ranking of pharmacists' perception on the healthcare professional best-suited in managing patients with IBD.



DISCUSSION

To the best of our knowledge, this is the first survey of pharmacists' knowledge and perceptions of IBD management to be performed in Australia. It contributes to filling a gap in the literature by exploring pharmacists' role in managing IBD in a primary care setting. As IBD is a chronic disease associated with high levels of morbidity and mortality, ongoing long-term management is essential (Andrews et al. 2010). Therefore, pharmacists are responsible for taking a prominent and proactive role in caring for patients with IBD (Prasad, Duncanson et al. 2020). An adequate level of knowledge can help pharmacists to understand the needs of patients with IBD and be able to address them (Blackburn et al. 2019; Zezos & Panisko 2018), such as regular monitoring for adverse effects, management of complex medication regimens, ensuring appropriate use of medications and lifestyle education and support (Massuger et al. 2019; Strohl et al. 2018).

Our findings suggest that pharmacists had a low to moderate knowledge about managing patients with IBD. Pharmacists demonstrated a high knowledge of general concepts of IBD, but lower knowledge related to specific, advanced IBD management concepts. The latter included low knowledge in colon cancer screening, associated risk with smoking in IBD, the prevalence of IBD, extraintestinal complications associated with IBD and vitamin deficiencies. In addition, pharmacists also demonstrated a low level of knowledge about medication-related aspects of care, such as OTC medication use leading to toxic megacolon and place in therapy of biologics when treating IBD patients. This suggests that pharmacists' base their level of understanding of IBD management as limited and highlights a gap in knowledge where more comprehensive education is required (Prasad, Keely et al. 2020). While knowledge can indeed be improved through educational sessions, there are still potential barriers (such as limited available time, and access to resources and guidelines), that require consideration for applicability in practice (Blackburn et al. 2019; Tan et al. 2012; Zezos & Panisko 2018).

Compared with the national data, the distribution of gender and registration by age group for pharmacists in Australia are consistent with the statistics provided by the Pharmacy Board for the period ending June 2020. There were more female pharmacists compared to males and relatively a similar proportion of pharmacists among all age groups except those aged ≤ 24 years. The findings also indicate that pharmacists perceived themselves as having better knowledge about IBD prior to completing the knowledge section of the survey. As demonstrated by Carvajal and colleagues, in a sample of 1,000 pharmacists, the authors reported that gender and age group classification influenced patterns of knowledge and how pharmacists applied that knowledge in practice, such as the utilisation of drug information resources (Carvajal et al. 2013). While there is sufficient evidence in literature relating to professional education associated with improved quality in healthcare, many only focus on the educational approach and content (Love, Messman & Merritt 2019; The Health Foundation UK 2012). There is a lack of evidence assessing the effectiveness of such educational interventions regarding the impact of such education on patient health outcomes or the long-term outcomes for patients and healthcare professionals (The Health Foundation UK 2012).

Active learning strategies, such as experiential learning where experiences and observations are conceptualised into practice, have shown to be more effective as they allow for hands-on practice and reflection (Chamane, Kuupiel & Mashamba-Thompson 2019; Lavalley et al. 2021; The Health Foundation UK 2012). Pharmacists are responsible for their own self-directed learning and maintaining continuing professional development as part of their professional practice. In a more recent

study, Prasad, Keely et al. (2020) reported the confidence level of pharmacists before and after an educational session on IBD and found that while pharmacists were not confident managing patients with IBD, they expressed their willingness to learn more about the disease. These results support the findings of the current study and highlight that pharmacists' knowledge of IBD is suboptimal, therefore suggesting that there is a need to acquire and/or update IBD-specific knowledge through continued education to improve knowledge or enhance experience and management skills (Mikocka-Walus et al. 2014; Tan et al. 2012).

The deficit in their knowledge can be understood through the concept of 'you don't know what you don't know', which is an important consideration in the context of any pre-/post-evaluation, and the application is relevant to a range of diseases (McGregor 2004). For instance, the recent issue surrounding the current COVID-19 pandemic, where little was known and still unknown regarding managing the virus. To better our understanding, more research and self-directed learning are needed to equip all healthcare professionals supporting the community and the healthcare system. In managing IBD, it is only through an accurate self-assessment that pharmacists can identify and explore areas in which they require additional learning. This difference between their perceptions of what they know and the level of their IBD knowledge could be due to a degree of overconfidence (Karpen 2018; Kovacs, Lagarde & Cairns 2020), limited experience with IBD patients or misconception of IBD management (Prasad, Keely et al. 2020; Tan et al. 2012). In addition, it is notable that the study also demonstrated a statistically significant difference in knowledge scores between pharmacists with exposure to IBD patients and those without. This suggests that pharmacists require adequate exposure and familiarity with IBD in their day-to-day practice to establish or enhance and maintain a strong core knowledge and skills related to IBD management (Mikocka-Walus et al. 2014; Tan et al. 2012). This is not surprising, as evidence literature acknowledges that educational interventions alone are not likely to generate improved quality of care in practice (The Health Foundation UK 2012). Therefore, it is more likely that regular interactions with people living with IBD would drive self-directed learning among pharmacists, contributing to their professional development and practices. Due to a relatively smaller prevalence of 0.4% for IBD (Deloitte Access Economics Pty Limited 2007; PricewaterhouseCoopers Australia 2013) when compared to other chronic diseases such as asthma and diabetes (Australian Bureau of Statistics 2018; Australian Institute of Health and Welfare 2018), pharmacists may provide advice to only a few IBD patients as part of their everyday practice. This may reduce the clinical exposure necessary for adequate knowledge and experience that is essential for optimal IBD management (Tan et al. 2012).

Our study also explored pharmacists' perceptions of the role of healthcare professionals in primary care managing patients with IBD. Our findings indicate that pharmacists consider GPs the key care provider for patients with IBD in primary care. This supports current literature that suggests that in Australia, most of out-of-hospital care for IBD patients is delivered by GPs (Crohn's & Colitis Australia 2017; Louis et al. 2015). However, pharmacists perceived themselves as the key healthcare professionals when providing information about medications to IBD patients. This is highlighted extensively in published literature and supports the role of pharmacists within a multidisciplinary care providing tailored information to patients in chronic disease management (George et al. 2010; International Pharmaceutical Federation 2019; Pharmaceutical Society of Australia 2019). While dietitians and nursing support were considered to have a role in managing patients, pharmacists perceived psychologists as having no role in the management of IBD. This discovery was notable, given the high burden of mental illness in IBD patients (Mikocka-Walus et al. 2020). While it would be noteworthy to explore why psychologists were considered least

important by pharmacists, this was not possible within the scope of the study. As outlined in the current Australian IBD Standards, an ideal IBD team should involve gastroenterologists, surgeons, nurses, dietitians, psychologists, pathologists, radiologists and pharmacists (Crohn's & Colitis Australia 2016); however, GPs were not considered an equally integral part of an ideal team (Crohn's & Colitis Australia 2016; Prasad, Potter et al. 2020).

Multidisciplinary care is considered essential to IBD management but is rarely implemented in practice (Koltun 2017; Lee & Melmed 2017; Ricci, Lanzarotto & Lanzini 2008). The need for healthcare professionals managing patients with IBD extends beyond the initial diagnosis stage to a lifelong requirement (Louis et al. 2015). The addition of new therapies, the approach of treat-to-target (shift from symptom control to mucosal healing) and a change to a more patient-centred approach has all led to a more challenging and involved role for healthcare professionals in the management of IBD (Colombel et al. 2020). Pharmacists are trained and qualified to provide the required care around medication management in a primary care setting (International Pharmaceutical Federation 2019; Pharmaceutical Society of Australia 2019) and have clearly demonstrated their ability in other chronic diseases such as asthma and diabetes (Prasad, Duncanson et al. 2020). In IBD, pharmacists have the opportunity to acquire additional clinical skills and apply their knowledge and expertise through primary care services to their patients in collaboration with GPs and other healthcare professionals such as gastroenterologists and IBD nurses (Massuger et al. 2019; PricewaterhouseCoopers Australia 2013).

This exploratory study provides valuable insights into factors that contribute to the varying degree of knowledge among pharmacists working in a primary care setting. The study was limited by a relatively small sample size, cross-sectional design and online delivery method of the survey. Firstly, data to calculate the number of registered pharmacists working in a primary care setting was not available at the time of the study. Despite efforts to collect data about a participant's principal place of practice by postcode, and because pharmacists may be employed in more than one location, the information collected by the Australian Health Practitioner Regulation Agency (Ahpra) was insufficient for the needs of this study. Secondly, due to the anonymity of the survey, it was not possible to identify the number of pharmacists who chose not to complete the survey and determination of a response rate was not possible. Thirdly, the online delivery may suggest that those who prefer electronic methods may be more receptive to participating. Another limitation could be related to pharmacists' interest in the survey research topic. As IBD can be considered a silent disease of small prevalence in comparison to other chronic diseases, pharmacists may not have enough patients with IBD to warrant awareness or understanding of IBD management. Based on the leverage salience theory, the survey topic is one of the most important factors that influence response rates (Groves, Singer & Corning 2000). In addition, incentives have been used in some studies to motivate survey participation in forms of monetary compensation (such as gift cards) and can be considered a constraint of this study, as we did not offer any incentives. For this study, we only included pharmacists who were working in a primary care setting; therefore, the sample is unrepresentative of all Australian pharmacists. Further, the global COVID-19 pandemic may have added to the increased workload limiting available time for pharmacists to participate in the survey, nor could we plan for alternative recruitment strategies. Given all these possible limitations, the sample size limits inferences associated with the study outcomes, with likely Type II errors. Like any survey design, there is possible participation and self-reporting bias. As this was an Australian study, it limits the generalisability of results to other countries regarding IBD knowledge.

CONCLUSION

Despite the incidence and prevalence of IBD increasing globally, there are few studies evaluating knowledge and perceptions of healthcare professionals, especially pharmacists in primary care. Such studies are important to allow for the adoption of proactive approaches that can deliver appropriate and evidence-based care to people living with IBD. This study indicates that the limited exposure to patients with IBD is directly associated with pharmacists' suboptimal knowledge managing IBD. As healthcare professionals, pharmacists have a responsibility to update and increase their knowledge of IBD. The ideal positioning of primary care pharmacists to support people with IBD could be capitalised on with access to a comprehensive educational response such as a specialty training pathway. Educational interventions to improve understanding of treatment options and the availability of accessible resources suited to primary care management of IBD are potential opportunities for targeting this knowledge gap. With high practical and translational implications, future research could focus on whether educational interventions can improve and/or maintain pharmacists' knowledge and perception in managing IBD.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Conflict of interest

The authors declare that there is no conflict of interest.

Abbreviations

IBD = Inflammatory bowel disease; GP(s) = General practitioners; OTC = Over-the-counter.

Ethical Statement

The Research Ethics Committee approved the study protocol at Hunter New England Health [2019/ETH00167] and the University of Newcastle Human Research Ethics Committee (HREC) [H-2019-0201].

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Citation: Martin, R, Phan, A, Tan, S, Mandrusiak, A & Forbes, R 2022, 'Hospital discharge planning: a qualitative study of new graduate physiotherapists' experiences', *Health Education in Practice: Journal of Research for Professional Learning*, vol. 5, no. 1 <https://doi.org/10.33966/hepj.5.1.15759>

Hospital discharge planning: a qualitative study of new graduate physiotherapists' experiences

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Abstract

Purpose: Discharge planning constitutes a large part of a physiotherapist's role when working in hospital settings. The challenges of decision-making related to discharge planning have been identified by experienced physiotherapists. Despite known challenges associated with the transition from student to clinician, the experiences of new graduates undertaking discharge planning are largely unknown. Therefore, this study aimed to explore:

1. new graduate physiotherapists' experiences of discharge planning in hospital settings, and
2. the influence of pre-professional training on their perceived preparedness for discharge planning.

Design: A qualitative general inductive approach using semi-structured interviews. New graduate physiotherapists ($n = 14$) working in hospital settings were recruited.

Finding: Four themes were generated: 1) responding to the pressures associated with discharging patients, 2) complex decision-making, 3) the role of the interprofessional team and 4) desiring additional context and complexity from pre-professional training.

Practice Implications: The study has identified that new graduates underestimate the extent to which discharge planning features in their roles within hospital settings and are unaware of the interprofessional practice required. While they felt that their pre-professional training provided the technical skills required for their roles, they felt they were not prepared for their role within the broader healthcare system or the complexity of clinical practice. This study encourages education providers to emphasise the role of physiotherapists within the broader healthcare system by highlighting contexts where physiotherapy knowledge can be applied (i.e., discharge planning) and understanding the physiotherapist's role within the interprofessional team.

Limitations: Important perspectives of mentors and other members of the interprofessional team involved in discharge planning have not been included in this study, which may have impacted the interpretation of the results.

Keywords: physiotherapy, discharge planning, hospital, qualitative, new graduate

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INTRODUCTION

Discharge planning constitutes a significant role of physiotherapists working in hospital settings (Atwal, McIntyre & Wiggett 2012). Patient discharge can be summarised by three pathways: discharge to the patient's home, ongoing rehabilitation or residential care placement (Pitas 2017). In addition to determining the timing of discharge, physiotherapists significantly influence the discharge destination decisions made by patients, their families and interprofessional teams (Potthoff, Kane & Franco 1997).

Perception of risks associated with discharge is known to impact discharge decision-making and discharge destination (Atwal, McIntyre & Wiggett 2012). These risks include adverse events occurring after discharge, such as failed discharge (Mathew et al. 2015), falls at home (Worley, Barras & Grimmer-Somers 2010) and, in extreme cases, death (Yu et al. 2011). Clinicians perceive additional risks associated with discharge planning, with these risks being linked closely to accountability and blame in the event of negative outcomes (Bowling & Ebrahim 2001). The implications of decision-making in this context can also be compounded by pressure on clinicians to prioritise discharge and improve patient flow through the hospital system (Goldman et al. 2016).

Experienced physiotherapists have identified the complexity of decision-making related to discharge planning. They report that they tend to place more emphasis on the unique needs and goals of the patient rather than on specific objective measures (Taylor et al. 2010). This was reinforced by Jette, Grover and Keck (2003), who reported that when formulating discharge decisions, physiotherapists and occupational therapists consider the patient's preferences and needs, ability to participate in care, level of functioning and life context (Jette, Grover & Keck 2003). To assist physiotherapists with decision-making regarding discharge, there are multiple discharge tools available for different patient presentations (Lati et al. 2014); however, it is acknowledged that each unique patient presentation must inform decision-making (Taylor et al. 2010). Therefore, the complexity of decision-making relating to discharge planning (Frost 2001; Jette, Grover & Keck 2003; Taylor et al. 2010) is considered an important area for pre-professional training and ongoing professional development (Frost 2001).

New graduates transitioning from student to clinician face unique challenges as they commence professional practice and workplace support during this time (Forbes et al. 2021). Stoikov et al. (2020) identified that new graduates in hospital settings are particularly challenged by the increased caseload volume and complexity of their roles compared to the protected workloads they experienced as students (Stoikov et al. 2020). New graduates working in hospitals have also reported difficulty coping with increased independence and managing expectations of themselves (Stoikov et al. 2020). This echoes research identifying that new graduates may not have the clinical experience to rely on when applying clinical reasoning in new settings (Martin et al. 2021). There are recommendations that training students to formulate and practice discharge decision-making should prioritise the patient as an individual and consider the complex environments in which they live (Jette, Grover & Keck 2003). This recommendation for strengthening new graduate physiotherapists' skills and readiness for discharge planning is further emphasised by potential interprofessional tensions caused by conflicting discharge priorities (Mizuma et al. 2020) and interpersonal tensions due to organisational expectations concerning patient safety and patient flow (Goldman et al. 2016).

Given the significance of decision-making for discharge planning (Frost 2001) and the need to consider factors beyond specific objective criteria (Taylor et al. 2010), the experience and readiness of new graduate physiotherapists undertaking discharge planning are of interest. Despite research investigating new graduate readiness for

managing different conditions (Forbes & Ingram 2019), workplace contexts (Martin et al. 2020; Stoikov et al. 2020) and interprofessional practice (Jones, Ingram & Forbes 2020), no investigation to date has explored the perceptions of new graduate physiotherapists regarding discharge planning in hospital settings. This is significant given the identified challenges of new graduate physiotherapy practice within hospital settings (Stoikov et al. 2020) and the established complexities of discharge planning (Jette, Grover & Keck 2003). A better understanding of new graduate experiences and readiness for this challenging area of hospital practice will provide employers and training providers insight into how to prepare and support new graduates undertaking patient-centred discharge planning when entering hospital settings (Durocher et al. 2015). Therefore, this study aims to explore:

1. new graduate physiotherapists' experiences of discharge planning in hospital settings, and
2. the influence of pre-professional training on their perceived preparedness for discharge planning in hospital settings.

MATERIALS AND METHODS

This study applied a general inductive approach to explore the experiences of new graduate physiotherapists undertaking discharge planning in hospital settings. An interview guide was created, informed by a review of the literature regarding discharge planning and the research team's expertise. The research team included physiotherapy students, clinicians and academics with experience working in hospital settings, preparing physiotherapy students for hospital practice and researching new graduate readiness and experiences in the professional setting. The interview guide (Figure 1) was intentionally designed to uncover the meaning of participants' initial responses and to convey the participants' experiences in their own words (Patton 2002). The interview was piloted by a team member (RM) who works as a physiotherapist in a hospital setting. This resulted in minor changes to the interview guide to refine the included questions and introduce broader prompts for meaning and details.

Figure 1: Interview guide

1. What has been your experience of discharge planning across hospital settings?
2. Can you recall any particularly challenging experiences?
3. What influences your decision-making around discharge planning?
4. Are there any elements of discharge planning that you find challenging?

PARTICIPANTS

New graduate physiotherapists working in hospital settings were recruited for the study. Inclusion criteria stipulated that participants must have been employed for a minimum of eight weeks in a hospital to ensure adequate exposure to the setting and that they had been working for two years or less since graduation (Chipchase, Williams & Robertson 2008). A snowballing sample of participants was established via professional contacts from the research team (Palinkas et al. 2015). Professional contacts were asked to approach new graduates in their workplaces regarding consent to be contacted by the researchers. New graduates who consented were then emailed

with additional information regarding the study and to arrange a mutually convenient time to be interviewed.

DATA COLLECTION

All interviews were conducted via telephone by one of two research team members (AP, ST) in April 2021. Interviews were audio-recorded on a second device, with reference to the interview guide (Figure 1) (Patton 2002). Before each interview, participants were provided with a working definition of discharge planning; that being:

Discharge planning includes making decisions about discharging a patient from the inpatient setting to either their previous residence or a residence that supports their current level of function and working with others to make these decisions.

The interviews ranged from 28 to 42 minutes. Data collection was ceased when no new ideas or perspectives were obtained from three consecutive interviews, signifying that data saturation had been reached (Varpio et al. 2017).

DATA ANALYSIS

Verbatim transcription and analysis were undertaken concurrently to inform data saturation. Analysis was undertaken independently by two members of the research team (RM, RF). These researchers immersed themselves in the data by reading through the transcripts multiple times and listening to the audio for contextual meaning from the participants. The researchers then annotated the transcript to identify statements of significance, recurring ideas and concepts. These annotations and their corresponding text were then compiled in a table and organised into groups and initial themes. The research team frequently met to discuss discrepancies in interpretation and refined the themes until a consensus was reached. Illustrative quotes were assigned to each code and theme to ensure data validity and reliability.

Other conscious measures were undertaken to ensure the trustworthiness, credibility and transparency of the data collection and analysis (Patton 2002). Initially, the authors undertaking the qualitative analysis (RM, RF) undertook the process of epoche to document their relevant opinions and beliefs about discharge planning (Englander 2016). The lead researcher (RM) is a physiotherapist with experience working across multiple hospital settings. The author undertaking the secondary independent analysis (RF) is a titled musculoskeletal physiotherapist and senior lecturer with significant experience in new graduate research. This ensured that their pre-existing views did not influence their analysis and that the study results were only informed by the data collected rather than the researchers' own bias (Varpio et al. 2017). Other measures included compliance with the interview guide to ensure consistency, a secondary review of all audio recordings post-transcription, two experienced independent reviewers completing the coding process and reflexivity among the research team to aid methodological rigour.

RESULTS

From the snowballing recruitment, a total of 15 participants consented to be interviewed. One participant did not meet the inclusion criteria for the length of time they had worked in the hospital setting and was subsequently removed from the study. A total of 14 participants were interviewed. All participants consented to involvement before the interview and were informed that they were able to withdraw consent up to the point of publication. Among the participants, there was a mean age of 23.5 years (range 22–29 years). Most participants were female (n=11, 79%), which reflects the trends of the larger physiotherapy workforce (Health Workforce Australia 2014). Further demographic data is outlined in Table 1.

Table 1: De-identified participant interview details*

Participant Number	Gender	Age	Participant Number	Employment Status	Time Employed (months)
1	Female	22	Female	Full time	4
2	Female	23	Female	Full time	4
3	Male	22	Male	Part-time	4
4	Female	22	Female	Full time	2.5
5	Female	22	Female	Full time	3.5
6	Female	25	Female	Full time	16
7	Female	25	Female	Full time	3
8	Female	23	Female	Part-time	18
9	Male	22	Male	Full time	16
10	Female	23	Female	Full time	16
11	Male	25	Male	Full time	3
12	Female	23	Female	Full time	6
13	Female	23	Female	Full time	19
14	Female	29	Female	Full time	16

*At the time of the interview.

Four key themes were generated following data analysis: 1) responding to the pressures associated with discharging patients, 2) complex decision-making, 3) the role of the interprofessional team and 4) desiring additional context and complexity from pre-professional training.

These themes and associated codes are summarised in Figure 2.

Figure 2: Summarised results

Theme 1	Responding to the pressures associated with discharging patients	
Codes	Working in a fast-paced setting	Perceived pressures from other staff to make discharge decisions

Theme 2	Complex decision-making			
Codes	Surprise at the complexity of discharge planning	Challenged to make decisions with significant consequences	Relying on senior staff when faced with complexity	Overcoming complex barriers to discharge
Theme 3	The role of the interprofessional team			
Codes	Interprofessional practice is crucial for effective discharge planning	Communication within the interprofessional team	Advocating within the interprofessional team as the physiotherapist Full time	
Theme 4	Desiring additional context and complexity from pre-professional training			
Codes	Lacking context about their roles within the hospital setting	Wanting additional preparation for interprofessional practice	Wanting additional preparation for the complexity of discharge planning	

THEME: RESPONDING TO THE PRESSURES ASSOCIATED WITH DISCHARGE

Participants reflected on the fast-paced nature of working in a hospital setting and voiced that the rapid pace required was one of the main challenges of discharge planning. The majority of participants reflected on the fast-paced nature positively and felt that their roles were 'rewarding' (P11):

'I enjoy the fast pace and seeing a big number of patients in a day. And I enjoy the discharge planning and trying to make sure that people expect to get home as soon as possible.' (P11)

'It is a very fast-paced environment ... it can be really, really exciting, a lot of really interesting cases, lots of really interesting people.' (P6)

Participants had a perception that there was 'pressure' (P10, P14) to discharge patients as fast as possible to relieve the pressures of 'bed capacity' (P13) and to enhance patient outcomes:

'Often people are in and out quite quickly and being in a public hospital, there's quite a lot of pressure to sort of discharge people as quickly as possible.' (P8)

'There's big push to discharge people as soon as possible and reduce length of stay ... high pressure and fast environment, but that's what I love about it.' (P5)

Given the importance of achieving timely discharge, participants began planning for discharge from their first contact with the patient and made an effort to 'consider discharge planning from day one' (P6). This created structured goal-setting for participants, as they prioritised discharge and goals specific to achieving discharge, such as progressing mobility aids or a stairs assessment:

'In terms of discharge planning, once I have an idea of what someone's follow-up might be, just starting the referral that day, rather than leaving things to the end of the week to sort of alleviate any pressure that can come closer to discharge.' (P10)

'I think in the hospital settings it's [discharge planning] one of the biggest parts of the job, you sort of have to be thinking about it all the time and considering it before for all the patients from as soon as they get in there.' (P12)

Participants were often overwhelmed by the tasks and decision-making required for discharge planning. They knew the consequences of not completing discharge planning efficiently and effectively. These perceived consequences included prolonged hospital admissions for patients, in addition to negative repercussions for the participants such as frustration from the interprofessional team:

'Making sure that you're starting early because if you haven't sort of organised things, prior to when the discharge is coming around, then it can increase their length of stay and you can frustrate other members of the team with that.' (P8)

In addition to their prioritisation of discharge planning, participants felt pressure from other staff and the hospital system itself to discharge patients. This was often in the scenario where the patient may have been medically stable but was not considered ready for discharge from the physiotherapy perspective. The participants were concerned that other staff viewed them as unreasonably withholding discharge, or that they were burdening the team by not discharging the patient. This pressure for decision-making was a significant source of stress and 'conflict' (P11) for the participants and had a negative impact on the participants' self-efficacy:

'You either knew that the patient was safe, or you knew the patient wasn't safe mobilising at home ... you then need to communicate that to the doctors if they are really pushing the patient and explaining why they can't get discharged.' (P11)

'The times where I found it difficult is when doctors have wanted to push them out of hospital a lot quicker so then there have been those bed pressures or they've been medically stable, but they need ongoing physio or OT!' (P6)

'The pressure from like consultants to discharge a patient, even though they're definitely not ready from a liability perspective, which can be a little bit tricky.' (P14)

THEME: COMPLEX DECISION-MAKING REQUIRED

Participants were surprised by the number of factors that complicated discharge, including shifting baselines, social situations, financial complications, difficult home environments or homelessness and requirements for ongoing medical care. Participants felt these comorbidities were what made discharge planning 'quite complex and difficult' (P1):

'The more challenging people are where they've got communication barriers, difficult discharge plans, or no discharge plan, where their mobility has deteriorated quite a lot, but they've got to get home or achieve a pretty high level of mobility.' (P9)

'Mainly complex medical patients, lots of them have complex social histories ... the discharge planning, which is often hard with those.' (P13)

Clinical reasoning as a new graduate was complicated by limited exposure to similar cases. With limited understanding of the clinical procedure, participants struggled to problem-solve every individual patient case promptly:

'People don't get back to their baseline and, and you have to think of alternate options ... I think that's what I found the most difficult because it's not really as easy to practice, it's a bit more different case-by-case.' (P1)

'On placement, you would go and talk to your clinical educator and sort of run your ideas past them. Whereas when you start, you kind of let loose to reason it with yourself, and no one's there checking anything.' (P5)

Participants felt significant ownership of their clinical decisions and felt that the consequences of making decisions that had negative outcomes were '100% on you' (P7). They reflected on the shift of patient ownership during their transition from student to clinician and found their new responsibility daunting:

'My experience has been daunting. It's something I haven't enjoyed because I don't have experience in it and at times I've proven that I haven't been perfect and patients have come back in because we haven't made the right call.' (P7)

Participants relied heavily on more experienced colleagues for input when they are unsure about their decision-making. Participants valued their seniors' input and viewed them as a wealth of knowledge and a 'broader toolkit' (P4) for ways in which patients can present as well as treatment plans:

'Either they've got some sort of variable or condition that I don't know a great deal about ... or if they've got quite a complex presentation in terms of discharge planning ... those two key things that flag the patient's being more complex, and that makes me think, okay, maybe I need someone with a bit more experience.' (P4)

'Just talking through those cases with the senior to see how it can, how things can be changed ... having just different opinions on treatment plans and discharge plans.' (P1)

THEME: THE ROLE OF THE INTERPROFESSIONAL TEAM

Participants strongly acknowledged that interprofessional practice plays a significant role in discharge planning and found the interprofessional practice to be a productive and positive part of their workdays:

'We work quite closely with the treating teams, as in the doctors, and also with the nursing staff, there's a lot of coordination with nursing staff and with the other multidisciplinary team ... there's a lot of, a lot of collaboration, you're rarely kind of, you're rarely planning and treating by yourself.' (P1)

Communication among the interprofessional team was recognised by participants to be one of the most important factors for effective discharge planning:

'I think the probably the most important thing is communication and early communication ... I'd sort of talk to the allied health team members and go and chat to the doctors about it. So, making sure they knew where we're up to, what needed to be done for discharge.' (P8)

'I think the doctors on the team are very appreciative of that because it gives them the heads up and it gives us something to work towards. So, I think that constant communication is really helpful.' (P6)

This positive influence of effective communication on discharge planning is also felt to be true in reverse, with reflected poor communication resulting in poor discharge planning:

'There was a patient who was a paraplegic from a previous spinal injury and he had come in for a washout of the wound and so he didn't really need physio input because his transfers were at his baseline. He'd been there for probably about a week or so before I got a referral to see him because he was reporting low back pain and they were saying that the only barrier to discharge was physio, but they'd only referred me after he'd been there for a week.' (P8)

Participants felt that a large part of their role within the hospital settings was advocating as the physiotherapist within the interprofessional team. They viewed their involvement in interprofessional practice positively and found it to be rewarding:

'As a physio, it's exciting that you get to advocate for your patients, and the doctors often make them better but we give them greater quality of life, which I find is really, yeah, really great.' (P6)

'I find working in an acute setting really rewarding ... I enjoy the discharge planning and trying to make sure that people expect to get home as soon as possible.' (P11)

This role was still viewed positively, even when the participants were advocating against the advice of medical staff or the wishes of patients discharging to unsafe environments.

'Patients, for instance, have been stubborn and declined any equipment, despite it being free for 28 days. But in hindsight, I guess we learn to be a little bit bossier and advocate for our patients to take equipment where need be and stand up for our patients, and advocate for their inpatient stay to be extended despite medical clearance. Even when the doctors are keen to discharge.' (P7)

THEME: DESIRING ADDITIONAL CONTEXT AND COMPLEXITY FROM PRE-PROFESSIONAL TRAINING

Participants felt that while their pre-professional training prepared them well, they did not realise 'how important it was [discharge planning] and how much of a role we played' (P1). Participants voiced that they would have liked additional preparation for discharge planning during their university training, with desired content revolving around learning more about the context of their roles and their contributions to the team:

'Maybe emphasise discharge planning a little bit more because it wasn't until I got to placement, and then started working, that I realised that it's ... one of the most important parts of our job.' (P9)

'I found mostly I became aware of essentially what discharge planning was when I was on placement and a lot of the uni lectures are very much like this is the management of a patient, but that's it. Yeah, it's just something that wasn't really ever explicitly mentioned.' (P10)

Participants also strongly voiced that they desired additional preparation for interprofessional practice at a university level. Given the importance of interprofessional practice for discharge planning, participants felt that this was a priority:

'I feel like we didn't do a whole lot of it [interprofessional practice] in subjects. There was more when we got to placement where I really developed those skills.' (P5)

'I think the hands-on stuff and the clinical skills and practical field I think I felt really prepared for and that was quite an easy well, not easy transition, but a smooth transition ... I wasn't as aware of like discharge planning and teamwork and all that kind of stuff.' (P1)

The preparation that they discussed included learning about interprofessional team roles to assist with discharge planning processes, with one participant explaining that they wanted 'more of an understanding of their roles in the broader team' (P6):

'I think asking other physios for help, my confidence was fine. Asking other members of the multidisciplinary team was probably something that I've grown in confidence with, as I've sort of been out of uni because you learn sort of what disciplines do and who you need to talk to about certain issues that arise.' (P8)

Further, participants felt underprepared for the complexities of discharge planning resulting from comorbidities and pressures within the hospital. They felt that more complex cases and realistic comorbidities would have better prepared them for practice where 'it was not clear what we were supposed to do' (P5). However, they also recognise that it is not feasible to only feature complex cases, given that they are learning the base skills during their pre-professional training:

'I think the transition could have been assisted with at university looking at more complex cases. I know this is virtually impossible, because if we didn't do the easy cases, shall we say, we'd not be able to have the skills to deal with the complex cases.' (P7)

Recognising the inability of the curriculum to fully address the context and complexity of discharge planning, participants identified clinical placements as the most intrinsic way to facilitate the growth from student to clinician for discharge planning:

'Placement was really the place where we got exposed to complex cases and that's, I guess, for me ... that's what helped me be prepared for my hospital role now.' (P7)

DISCUSSION

This study has explored new graduate physiotherapists' experiences of discharge planning in hospital settings and the perceived influence of their pre-professional training on their preparedness for discharge planning. New graduates were unaware of the extent to which discharge planning would feature in their roles in the hospital setting and the interprofessional practice required. Some new graduates experienced discharge planning as a source of anxiety, given the high levels of perceived risks to both patients and themselves. New graduates felt they had not developed the clinical reasoning skills required for complex discharge planning and instead relied heavily on mentorship and guidance from more experienced colleagues and the wider interprofessional team. While they felt that their pre-professional training provided strong foundational skills, new graduates voiced that more training in interprofessional practice, additional clinical reasoning for complex cases and more context for their roles within the hospital setting would be of value to aid readiness.

New graduate physiotherapists identified that discharge planning was an important aspect of their role. They felt that they understood both their contribution to achieving discharge and the implications of making appropriate discharge decisions, including falls and re-admission to hospital. Similar acknowledgements have been made by new graduate physiotherapists in other studies who recognise their role in hospitals as restoration or improvement and prevention (Barradell, Peseta & Barrie 2018). Barradell, Peseta and Barrie (2018, p. 398) quoted a new graduate physiotherapist as saying, 'it's not just about treating what you can see so they can go home but also preventing things in the future'. The acknowledgement of discharge planning requires consideration for both the present and future, reflecting the complexity that is involved (Taylor et al. 2010).

New graduates were significantly challenged with the clinical reasoning required for complex discharge planning, which often involved biopsychosocial considerations for the patient and the context of the discharge destination. Experienced physiotherapists similarly recognise the complexity of discharge planning and are known to place more emphasis on the specific needs and goals of the patient rather than meeting objective hospital-based criteria (Taylor et al. 2010). When making decisions around discharge planning, experienced physiotherapists are known to critique protocols and generic rules of practice and 'interpret the boundaries of practice according to the circumstance' (Smith, Joy & Ellis 2010, p. 95). Conversely, the discharge planning of novice physiotherapists is known to have a more external focus, taking into consideration published contraindications and precautions, advice from other colleagues and workplace policy (Smith, Joy & Ellis 2010). These findings are consistent with the results of the current study, where new graduates felt strongly influenced by others in the discharge planning, reasoning and decision-making.

There is additional risk perceived by clinicians undertaking discharge planning, with negative outcomes closely associated with feelings of accountability and blame (Bowling & Ebrahim 2001). This risk was a point of frustration and anxiety for new graduates, with one participant going as far as voicing a sense of responsibility for a failed discharge. Discharge planning has historically been driven by 'protecting' the patient's physical safety, often at the expense of their self-declared interests and values (Durocher, Gibson & Rappolt 2017). Contemporary literature has called on clinicians to break down the barriers to discharge home, including fear of risk to the patient (Durocher, Gibson & Rappolt 2017; Durocher et al. 2015; Frost 2001). New graduates in this study experienced anxiety around discharge decisions and personally

attributed negative patient outcomes to their inexperience, rather than to the inherent risk present. Smith et al. (2018) reported similar experiences among novice physiotherapists who felt uncertain about the adequacy of their knowledge related to discharge planning. Despite identifying that they had less knowledge, they could not distinguish between their knowledge and what could be known, leading to an increased sense of anxiety, similar to the participants in the current study (Smith, Joy & Ellis 2010). Further investigation is warranted into how fear and feelings of inadequacy affect discharge planning decisions and the implications for physiotherapists, patients and the wider health setting.

The results of this study suggest that new graduate physiotherapists often perceive pressure from medical staff to discharge patients when it is not indicated from a physiotherapy perspective. This was attributed to reducing 'bed block' within the hospital, reducing nursing staff workload and 'cherry-picking' anecdotally 'difficult' patients to discharge based on staff preferences. Goldman et al. (2016) also reported on the tensions present among healthcare providers undertaking discharge planning and attributed them to differences in professional responsibilities (Goldman et al. 2016). While this has merit, there must also be an acknowledgement of the learning that occurs during the transition from student to clinician, and that for new graduates, the greatest acquisition of clinical competencies occurs from three to six months of practice (Cheng et al. 2014). Considering this, the new graduates in this study are inferred to be learning the nuances of appropriate hospital discharge, and that some of the perceived pressure from medical staff for discharge may have been clinically warranted. However, the new graduates also perceived reduced pressure from clinicians who approached discharge planning with clear communication regarding their clinical reasoning. In other settings, transparent communication practices have been established to lessen tensions and improve efficacy within the interprofessional team (Goldman et al. 2016). Multiple authors have concluded similar inferences about interprofessional practice for discharge planning; for example, that discharge planning relies on complying with multiple viewpoints based on a mutual understanding (Mizuma et al. 2020), and that poor communication between the interprofessional team is the main contributor to poor discharge (Lobchuk et al. 2021). Effective communication and collaboration among the interprofessional team lessens perceived pressures associated with discharge planning (Smith, Joy & Ellis 2010), and is vital for the sustainability and efficacy of the model.

While new graduates found interprofessional practice rewarding, they felt underprepared for their roles within the interprofessional team and believed strongly that additional pre-professional preparation would have been beneficial. Successful preparation of new graduates for interprofessional discharge planning features strongly in the literature (Robertson et al. 2021; Smith et al. 2018). Evaluation of an interprofessional simulation for discharge planning has been shown to significantly enhance physiotherapy students' perceptions of their roles and their understanding of their interprofessional team members' roles (Kraft et al. 2013). During the COVID-19 lockdowns, educators created synchronous virtual interprofessional simulations focused on discharge planning for nursing and medical students, highlighting another example of effective pedagogy for these skills (Robertson et al. 2021). Critically, Stokes et al. (2020) found that occupational therapy and physiotherapy students who undertook interprofessional collaboration significantly improved their discharge decisions when evaluated against expert opinions. This acknowledgement of interprofessional practice both facilitating discharge planning and improving the clinical reasoning of novice practitioners around discharge planning highlights the significance of pre-professional training for interprofessional practice (Stokes et al. 2020).

IMPLICATIONS

This study adds to the body of work concerning new graduate physiotherapists' experiences in hospital settings, with implications for both higher education providers and new graduate employers. This study encourages education providers to emphasise the role of physiotherapists within the broader healthcare system by highlighting contexts where physiotherapy knowledge can be applied (i.e., discharge planning) and understanding the physiotherapist's role within the interprofessional team. While this study solely investigated discharge planning, broader implications may be drawn around the need to better prepare future physiotherapists for interprofessional practice. Additionally, this study advocates for employers of new graduate physiotherapists to ensure appropriate support is provided to graduates during the transition from student to clinician. This support from senior clinicians is actively sought by new graduates and is supported by previous research into new graduate mentorship (Forbes et al. 2021). Further research into the preparation for and support of new graduate physiotherapists in the hospital setting is warranted, given the multi-faceted roles of physiotherapists in this context.

LIMITATIONS

Firstly, participant self-selection presents as a limitation of the research, which may result in the exclusion of experiences or participants. Mainly, participants with negative experiences of transitioning from student to clinician in the hospital setting may not be reflected by this sample. Additionally, most participants involved in the study were recruited from one state in Australia, which may limit the generalisability of the results on both the national and international scales. This was compounded by the sampling method of snowballing recruitment, as new graduates not associated with the authors were unable to be considered for the study, which may have impacted the findings of the research. Further, the important perspectives of mentors and other members of the interprofessional team involved in discharge planning have not been included in this study, potentially impacting the interpretation of the results. Finally, while this study is a useful foundation for research regarding discharge planning, further research featuring different sampling methods, increased geographic diversity and increased diversity of practice setting is warranted.

CONCLUSION

This study has explored new graduate physiotherapists' experiences of discharge planning in hospital settings and the perception of their pre-professional training on their preparedness for discharge planning. The results indicate that new graduates underestimate the extent to which discharge planning would feature in their roles in the hospital setting and may underestimate the interprofessional practice required. While they felt that their pre-professional training provided strong foundational skills, new graduates voiced that more training in interprofessional practice, additional clinical reasoning for complex cases and more context for their roles within the hospital would be of benefit. Further research is required into how best to prepare new graduate physiotherapists for their roles in hospital settings.

Acknowledgements

The authors wish to thank the physiotherapists who participated in this project.

Conflict of Interest

The authors declare no conflict of interest.

Funding

There are no sources of funding to declare.

Ethical Statement

Ethical clearance was gained for this study from the University of Queensland - Human Research Ethics, approval number 2020002698.

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