ORIGINAL RESEARCH

Virtual communities of practice for novice occupational therapists: a vehicle for learning, support and professional identity strengthening?

AUTHORS

Kirsty van Stormbroek[1] MSc Occupational Therapy, Lecturer * iD [https://orcid.org/0000-0003-4890-5063]

Lisa O'Brien[2] PhD, Discipline Lead: Occupational Therapy iD [https://orcid.org/0000-0002-4149-6669]

Tania Rauch van der Merwe[1] PhD, Senior Lecturer iD [https://orcid.org/0000-0002-5751-2707]

Hellen Myezwa[3] PhD, Head of School, hellen.myezwa@wits.ac.za iD [https://orcid.org/0000-0003-4562-6413]

CORRESPONDENCE

*Ms Kirsty van Stormbroek kirsty.vanstormbroek@wits.ac.za

AFFILIATIONS

[1] Department of Occupational Therapy, School of Therapeutic Sciences, University of the Witwatersrand, Johannesburg, Republic of South Africa

[2] Department of Nursing and Allied Health, School of Health Sciences, Swinburne University of Technology, Hawthorne, Vic. 3122, Australia

[3] Department of Physiotherapy, School of Therapeutic Sciences, University of the Witwatersrand, Johannesburg, Republic of South Africa

ABSTRACT:

Introduction: Healthcare practitioners delivering services in rural and underserved areas need timely access to appropriate knowledge to optimise the care they deliver. Novice generalist occupational therapists in South Africa experience this need as they respond to a high demand for hand therapy. Embedded within a study aimed at identifying their support and development needs, this article describes participants' experience of a virtual community of practice.

Methods: A qualitative case study design was employed. Nine occupational therapists participated in a virtual community of practice that met fortnightly for meetings and interacted on WhatsApp. Data were collected through photo elicitation, facilitated reflection, and case discussions. An online survey questionnaire was used to evaluate participants' experience of this virtual community. Thematic analysis was applied to the anonymous responses submitted by participants ($n=7$). A number of strategies were employed to ensure the trustworthiness of results including prolonged engagement, member checking, peer examination, reflexive reading and writing, triangulation, and a dense description of participants to enable readers to evaluate the transferability of results.

Results: Three themes were generated from analysis. The first theme, *versatile support*, describes participants' experience of being helped and supported, appreciating the immediacy of support, and being able to share resources. *A vehicle for learning* captures participants' experience of mutual learning, opportunity to reflect, to acquire knowledge and skills, and develop their clinical reasoning. Finally, the community of practice was *grounding*: learning opportunities were contextually relevant and participants were able to consolidate their professional values and identity. Participants raised the importance of using online platforms that were accessible, recommended a group size of 5–10 members, and proposed 60–90-minute meetings held weekly or fortnightly.

Conclusion: A virtual community of practice provided both support and professional development opportunities for therapists delivering hand therapy. Careful planning and implementation to upscale this intervention are recommended for rehabilitation personnel delivering care to underserved communities in South Africa. The logistics of virtual communities need to mitigate for connectivity difficulties, and online platforms should enable real-time support. Participant satisfaction and the evaluation of implementation outcomes should be considered in the design of virtual communities of practice.

FULL ARTICLE:

Introduction

Around 40% of the population in South Africa live in rural areas. Despite carrying a disproportionate burden of disease, rural communities experience greater barriers to accessing health care than urban residents[1]. The responsibility for rehabilitation services in rural and underserved parts of South Africa frequently rests on a group of novice practitioners completing a year of compulsory community service after graduation. Community service for health professionals is a human resourcing strategy implemented by the South African government two decades ago to strengthen public health services in rural and underserved settings[2]. The strategy has proved to be an effective recruitment strategy[3], substantially increasing the number of occupational therapists and other rehabilitation personnel in the public health sector[4].

Community service does not, however, significantly improve retention of staff in rural and underserved areas[3]. The annual turnover of this staff cadre presents challenges to service continuation and expertise retained within these services. Inadequate management, support, and supervision[3,5,6] have frequently been reported. In a study of occupational therapists who completed their community service in 2013, 65.9% ($n=60$) reported dissatisfaction with supervision[5]. In a smaller 2019 sample of community service occupational therapists, 40% ($n=30$) were dissatisfied with supervision and a further 22.7% ($n=17$) did not have a supervisor, suggesting minimal improvement in satisfaction between the two studies. The latter also suggests an increased vulnerability to burnout: therapists who were dissatisfied with supervision or reported minimal social support were more likely to report emotional exhaustion as one of the three components measured for burnout ($p=0.02$ and $p=0.01$ respectively)[6].

Understanding the typical practice characteristics of community service occupational therapists provides some context for their vulnerability and need for support. These therapists are young novices (usually aged 23 years), navigating the transition to clinical practice[5,6], for which they are typically required to relocate[5]. Most of these therapists are placed in underserved settings[5] where services are underdeveloped or where they are the only occupational therapist. Around 40% of therapists are placed in rural settings for their first year of practice. This may also be the first exposure to rural practice[5,6] for those therapists who complete their community service in rural areas. Occupational therapists with experience are known to typically move out of public health services into South Africa's private health sector after gaining a few years of experience within state services, which has detrimental effects on service delivery[7].

Community service occupational therapists typically work in a generalist capacity, intervening across multiple areas of occupational therapy practice. One area of practice that these novice therapists have reported as being challenging is hand therapy[8]. The demand for hand therapy is substantial due to high levels of hand trauma largely caused by interpersonal violence, road accidents[9], and work-related injuries[10,11]. Despite the high demand for hand therapy in the public sector, a majority of therapists with more than 5 years of experience work in the private sector[12]. Most members of the South African Society of Hand Therapists work in the private sector, and in urban centres[13], suggesting limited hand therapy expertise being available to community service occupational therapists working in rural or underserved areas. Research has recommended further investigation into the support and development needs of these therapists for hand therapy, in order to enable sustainable and effective interventions that are responsive to the needs of therapists and the healthcare context[5]. The purpose of this study was thus to describe community service occupational therapists' experience of delivering hand-injury care in order to identify their support and development needs. Previous work with this population has also recommended the use of collaborative research approaches that enable these therapists to actively participate in identifying their own needs and articulating strategies to address these[5].

To facilitate data generation while supporting co-construction of knowledge between researcher and participants, a virtual community of practice (VCoP) was selected as the medium for data

collection. A community of practice (CoP) is 'a group of people who share a concern or a passion for something they do & learn how to do it better as they interact regularly' (p. 11)[14]. A VCoP, or online CoP, is a group that uses the internet to engage with others who share the same interest or concern[15] to share experiences and expertise[16].

A CoP acts as a 'container of social learning' and has three structural components: a *domain* or specific capability that is important to members; a *community* or specific composition of group members; and an area of *practice* that becomes the focus of engagement for members [14]. In the present study, hand therapy delivered by generalist occupational therapists was articulated as the CoP domain, and novice community service practitioners, along with the researcher, constituted the community. Delivering better hand therapy was the practice focus of the group. Because community members were geographically dispersed, a VCoP was chosen.

CoP are characterised by sustained learning partnerships between practitioners who commit to interact regularly to collectively and individually improve a specific capability. This commitment to learning together over time is what differentiates CoPs from other more informal social learning spaces[14]. Evidence of the support and learning needs of generalist occupational therapists[5,6,8] suggested that a CoP could act as an effective data collection tool – the researcher gathering data of participants' support and learning needs, while members accessed support and negotiated learning for improving their hand therapy practice. Data collection would then also offer substantial benefits to participants including journal club sessions, sharing of resources, and support for learning. Community service is a 12-month contract and few therapists continue in the same practice setting on completion of this service period. So while joining the VCoP constituted a decisive commitment to the community, it was constituted to last only until the completion of their service year, rather than involving long-term involvement typical of CoPs. The choice of an online data collection method during proposal development in 2019 proved fortuitous when COVID-19 restrictions challenged in-person research activity during 2020 and 2021.

The VCoP proved to be a dynamic data collection tool and the benefit that participants appeared to draw from the community was substantially greater than anticipated. To understand these benefits, the objective of this article is to report on participants' experience of the VCoP for supporting delivery of hand therapy services by novice generalist occupational therapists working in rural and underserved areas. The article is situated in a broader study that sought to extrapolate the hand-injury care support and development needs of therapists from an account of their practice experiences.

Methods

This study employed a qualitative case study design. Invitations to participate in the study were circulated via social media and interested community service occupational therapists attended an online information session about the study in June 2021. Nine therapists provided informed consent to participation and data collection took place from July 2021 to January 2022. Meetings were held on Microsoft Teams every 2 weeks and each meeting

lasted around 90 minutes. Data collection techniques used during meetings included photo-elicitation and facilitated reflection activities. Continuous professional development activities were also arranged based on emerging needs in the group and subject experts were invited to present on these topics. These included formal case discussions, a session on clinical reasoning in hand rehabilitation, basic biomechanical and treatment principles, management of the neuro-hand, occupation-based hand therapy, considerations for disability grant eligibility, and sensory re-education. A need emerged early in the study for a platform that could facilitate 'real-time' support. Thus additional ethics approval was obtained to include WhatsApp as a data collection platform that enabled participants to troubleshoot clinical challenges, obtaining guidance and feedback from each other and the researcher. Online methods are the preferred method of VCoP evaluation[17] so an anonymous online survey questionnaire (Box 1), distributed using Microsoft Forms, was used to capture participants' experience of participating in the VCoP.

Meetings of the CoP on Microsoft Teams were recorded and transcribed. The WhatsApp chat was downloaded. Data were managed and analysed thematically in NVivo v12 (Lumivero; https://lumivero.com/products/nvivo). The data that evaluated participant experience via online survey were also downloaded as a Microsoft Word document and analysed manually for the specific purpose of this article. Reflexive thematic analysis[18,19] was used within the broader study as the type of thematic analysis suited to the researcher's constructivist paradigm and pragmatic approach to the research question. Analysis commenced in January 2022 with printing of the survey data, reading through this data and making notes. Data were then coded. An additional response was received from a participant in May 2022. A finalised coding list was reapplied to all data in May 2022 after which themes were generated. These themes were presented to participants in an online member-checking interview as well as to the co-authors of the study. Themes were then finalised and a report of the study generated. Demographic data, excerpts from transcriptions, and self-assigned pseudonyms were used to construct simple vignettes for each participant (Box 2) to provide context for their experience of the CoP and to allow the reader to evaluate the transferability of findings.

The trustworthiness of results was strengthened through a number of strategies[20]. Credibility was established through prolonged engagement and frequent interaction with participants between June 2021 and June 2022. Member checking was used to assess participants' ability to 'recognise their experience in the research findings' (p. 219)[20]. A report of the study that contained the raw data, coding of data and theme construction was submitted to an experienced research colleague for examination. In addition, the first author engaged in critical reflection during the research process in order to develop insight into her subjectivity and potential biases related to this position. A dense description of participants (presented using vignettes in Box 2) allows the reader to assess the transferability of results. Exposing a record of research procedures and analysis process and logic to an expert colleague strengthened dependability (report submitted for peer audit available on request). The triangulation of data sources (participants) and the researcher's pursuit of reflexivity undergirded the confirmability of results.

Box 1: Questions included in the online survey to evaluate members' experiences of virtual communities of practice participation.

1. Please share what the Hands Community of Practice has meant to you as you reflect on your year as a Community Service occupational therapist doing hand therapy (amongst many other things).

2. What was the most valuable aspect/s of the Community of Practice?

3. What about the Community of Practice did not work / what would you change?

4. Would you advocate for a Community of Practice as a vehicle of learning for Community Service OTs? Why/Why not?

5. Would you advocate for a Community of Practice as a vehicle for learning specifically for novice/generalist therapists delivering hand therapy in rural, remote or underserved areas?

6. Is a Community of Practice well suited to supporting generalist therapists in rural/remote/underserved areas for treating hand-patients specifically?

7. How many members in a CoP do you think is ideal?

8. How often should a Community of Practice meet? Why?

9. If you could choose one super-power to help you respond to the needs of your hand-injured patients, what would it be?

10. What advice would you give the 2022 occupational therapists regarding responding to the needs of hand-injured patients?

11. Please can you comment on the usefulness of the WhatsApp group to your support and development in treating hand patients? What was particularly helpful / not helpful?

12. Please comment on the sessions provided by [Expert 1 on basic clinical reasoning in hands, case discussions, scar and wound management and sensory rehabilitation

13. Please comment on the session provided by [Expert 2 on treating the neuro-hand] identifying the most valuable aspects / things that worked well and things you would change.

14. Please comment on the session provided by [Expert 3 on eligibility for disability grants] identifying the most valuable aspects / things that worked well and things you would change.

15. Please comment on the session provided by [Expert 4 on occupation-based hand therapy] identifying the most valuable aspects / things that worked well and things you would change.

16. In our first session together you gave yourself a self-description or 'stage name' (pseudonym) (e.g. 'The opportunist', 'Trying', 'loving and caring', 'the find-a-way-OT', 'Strong, creative and kind'). At the close of your Community Service year, if you had to look in on yourself and your practice, what name would you give yourself?

17. Please share anything else that you would like to about the Community of Practice, your experience of treating hand patients etc.

Ethics approval

All necessary ethics permissions were obtained prior to data collection through the University of the Witwatersrand Human Research Ethics Committee (Medical) (M200235).

Results

Seven of the nine participants responded to the online CoP evaluation survey, the aim of which was to describe participants' experience of the benefits of participating in the CoP for supporting their delivery of hand therapy services. A vignette of each participant's experience is presented in Box 2. This is followed by an illustration (Fig1) and description of the three themes generated from analysis. Recommendations for CoP logistics shared by participants are outlined at the end of the section.

Box 2: Participant (*n*=9) vignettes: *Welcome to my corner of the hand therapy world.*

Illusionless optimist

Welcome to my corner of the hand therapy world ... a district hospital in a deep rural village in the mountains. Beautiful, but very rural! Resiliently optimistic, I embarked on my rural Community Service in a bubble of big dreams. An environment so poorly resourced grounded my excitement: I had no idea how to provide hand therapy. Most of the time hand therapy patients don't recover as service and resource constraints mean that they aren't able to access surgery or rehabilitation. I see 20–30 patients per month who require hand therapy. One of my patients was Uuka. I was able to figure out, through reaching out to experts, that he had a peri-lunate dislocation. But Uuku declined treatment: surgery would have been difficult to access and he was worried about losing his job; he would rather have pain than no movement. Feelings of futility sometimes come with working in a setting like this – even when you know what is wrong and what should be done, patients still aren't able to get the help that they need.

Dedicatedly winging-it

Welcome to my corner of the hand therapy world ... I deliver rural clinic-based services. I treat around 30 patients with hand conditions each month. My first few weeks was the most overwhelming thing I've ever experienced: treating serious hand injuries with no undergraduate hands experience, no occupational therapy colleagues, no on-site supervisor, and working out of a residential park-home. How could *I* be expected to treat three-year old Kagabu's burnt hand? This shouldn't be allowed! But I got by. I read and called my supervisor (I probably could have read more). I did enough to get by. At times I dissociated myself from the experience to cope. But it got better. I made splints and pressure garments for Kagabu. I remember a surge of joy as I watched him, hesitatingly at first, but with growing confidence, use his burnt hand to play. He did it! I did it!

Eager and willing

Welcome to my corner of the hand therapy world ... a township clinic situated on the outskirts of a large city. A small part of my patient load is patients with hand impairments. Some patients have sustained assault injuries and are referred to me when discharged from the City's hospitals. But most of my patients have chronic conditions that affect their hand function – cerebral palsy, CVAs [cerebrovascular accidents], congenital conditions. With limited knowledge and experience, and very few resources, it's very difficult to feel like I'm actually able to help patients achieve improved function and participation. I'm eager and willing to do everything that I can but that often feels like it falls very short of the need. The services aren't terrible, but the system provides only limited resources and offering a quality occupational therapy service feels like what a sunflower might feel growing through mud.

The Bad Grad

Welcome to my corner of the hand therapy world ... a large urban hospital. I've rotated through different units in the large occupational therapy department treating around 100 hand patients per month when I was on my orthopaedics rotation. I knew nothing leaving uni – I felt like an official 'bad grad' but thankfully I had a supervisor who was a hands expert and was able to teach and guide me. Despite being a better-resourced hospital, we still spent much of our time dealing with late referral tendon injuries and trying to fix the doctors' mistakes caused by a lack of experience, mismanagement and late referral.

Tired and trying

Welcome to my corner of the hand therapy world ... a tiny rural hospital, nestled between rondawels [round dwelling with thatched roof], rolling hills and the ocean. Not much around besides goats, cows and a few chickens. I saw about 40 patients with hand injuries each month – close to half of my caseload. Hands has been frustrating – I often had no idea what to do. Yet it was rewarding when I got it right – like with 9-year-old Andiswa who had a severely burnt dominant hand but was able to return to school. Working in an underdeveloped and strained system was hard and I needed a psychologist to make it through the year. That said, I remain hopeful that things will change for healthcare in our country.

Anx-cited outsider

Welcome to my corner of the hand therapy world ... a rural regional hospital. It's a world so different to the one I know. I'm an anxious outsider: feeling out of place, out of my culture, but eager to learn. I was involved in a weekly hands clinic at the hospital and I saw around 30 hand-injured patients per month. I also had frequent clinic outreach and home visits. Despite a lack of resources and guidance, I learnt a lot and I was able to consolidate my university foundation. Thulani is perhaps my most memorable patient. He was stabbed in the head with a knife by someone trying to steal his beer at a time when COVID-19 restrictions made alcohol scarce.

The find-a-way OT

Welcome to my corner of the hand therapy world ... a large rural hospital in a very hot part of the world! I see around 30 hand-injured patients each month. Hand therapy is challenging and my clinical reasoning is being put to work. Patients are deeply grateful for any service that I'm able to offer them. But resources are very limited and the support and supervision that I receive is much less than I need.

Solo worker bee

Welcome to my corner of the hand therapy world ... I serve urban clinics on the outskirts of a big city. I drive from clinic to clinic, carrying the world (my therapy things) with me. I see about 40 patients with hand conditions each month. Many of them have chronic hand problems like children with cerebral palsy or adults with old radial nerve injuries. But many patients don't have formal diagnoses. 'Seeing what I can do with the resources I have' summarises my experience. I am able to refer patients to a district hospital when I'm really stuck, although often patients aren't able to attend these appointments.

The growing therapist

Welcome to my corner of the hand therapy world ... deep in a deep rural setting. I work at a district hospital and we service 16 primary health care clinics in the area. About 50% of my caseload is patients with hand injuries – many traumatic. I see a lot of victims of abuse and violent crime. 'Hands' was daunting to start with and I lacked confidence. Although I was the therapist with the least experience in my department, I had the most 'hands' knowledge. But, with time, I became more comfortable with hands and enjoyed treating these patients. Seeing patients being able to return to work after a hand injury was very rewarding.
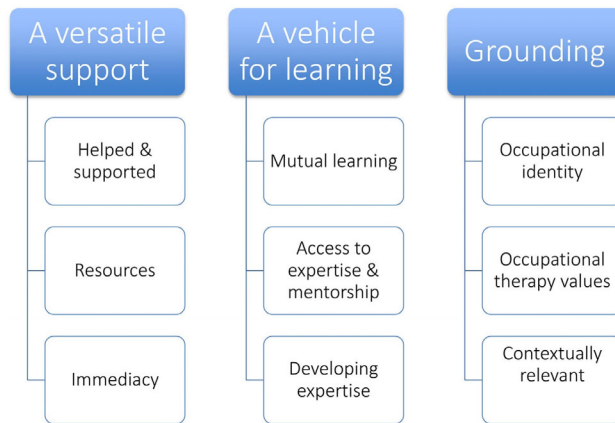
Figure 1: Themes and subthemes that captured participants' experiences of the benefits of the virtual community of practice.

Theme 1: A versatile support

The CoP proved to be a space where participants could receive much-needed support for delivering hand-injury care in underserved settings as novice practitioners.

Help and support: Firstly, the CoP facilitated feelings of being helped and supported. One participant explained:

> Everyone was so supportive and willing to listen … to share their experiences which makes sharing yours easier, or just being able to relate … which is 'good for the soul' and makes you feel less frustrated and alone in all the struggles. Being able to ask the people for help and knowing somehow we'll figure this out when you have a patient in front of you. (Participant 7)

The CoP provided a sense of the community for the loneliness and sense of pressure experienced in a rural setting:

> When you're in rural and remote areas you often end up feeling really lonely and there's a lot of pressure. It's not like in the city where if you don't know how to do something you can … send your patient to … see another therapist 10 minutes away. You are the only therapist and it's all on you. So having a community of people who can support you and help you is super helpful. (Participant 2)

One participant echoed the value of a virtual community of others 'in the same boat'. For another participant, the supportive environment enabled her to share her vulnerability as a novice therapist, referring to the CoP as 'a safe space to admit my weaknesses':

> It's a great support system to inexperienced OTs [occupational therapists] in need of assistance to being clueless with certain cases, support, and 'counselling' … a few listening ears which helps knowing you're not alone. The offloading your emotions was so helpful not only for that but also to hear how others coped … knowing it's not just me … coping with commserve [community service] and knowing 'I'm not so bad because we're all struggling'. It also gave me hope that it will be alright hearing other people's stories … that support was great, others pulling each other up at different times. (Participant 7)

Immediacy: The CoP, with WhatsApp being added as a platform for interactions, was able to meet *the need for immediate guidance and support*. One member identified this as the most helpful

aspect of the CoP:

> The WhatsApp group where [the researcher] would answer questions 'in real time' (i.e. while you're sitting with your patient in the session). (Participant 2)

Another participant reiterated the stress-alleviating effect of having access to immediate support:

> Having the WhatsApp group a phone away is amazing for your stress levels – knowing you can ask for help and there is always a response. (Participant 7)

Resources: Additionally, the group provided a space to readily share resources:

> Having a place to access resources … has assisted me in treating hands clients. (Participant 4)

Group interactions also supported resourcefulness:

> … you learn so many tricks from others, [like] how to use old objects as resources. (Participant 7)

Theme 2: A vehicle for learning

Participants shared how the CoP provided a rich opportunity to construct learning.

Mutual learning: Learning was first of all characterised as mutual learning. 'Sharing' and 'comparing' were words used by participants to discuss this reciprocal learning. One participant reflected:

> … it allows you to share your experience and learn from others that are in the same situation. (Participant 6)

Learning through other participants' clinical questions was another aspect of this mutual learning:

> It was helpful to see others' questions and the answers to them 'cause often you'd get a similar case and already have knowledge on it because of the group. (Participant 6)

Access to expertise and mentorship: Learning in the CoP was supported by being able to access expertise in the group as well as the group providing a means to mentorship. Two participants explained these benefits:

> Being given access to people who could actually help me and

teach me how to clinically reason through cases felt like winning the lottery in terms of hand therapy. (Participant 2)

By having a senior OT as part of the CoP also assists with mentorship when that is not available in your Community Service setting (i.e. you are the only therapist). (Participant 6)

Developing expertise: Through the structure provided by the CoP and the interactions that this facilitated, participants were able to develop expertise for hand therapy. This was facilitated by opportunities to reflect in the group and a 'safe space' to gain knowledge and skills:

It has been a place to reflect and grow as an OT practitioner in terms of Hand Therapy. It has allowed me a safe space to admit my weaknesses and limitations whilst providing an opportunity to gain knowledge and skills by talking to other OTs in the same situation. (Participant 5)

A similar benefit was explained by a participant in the context of being responsible for a diverse caseload:

… as a generalist OT there are so many conditions you have to focus on … so there's a one-stop group to give you knowledge so that you don't have to look up all the information by yourself … information you wouldn't necessarily have found in articles … (Participant 6)

The learning space provided by the CoP compelled critical thinking, which contributed to the development of expertise:

It also forces you to think on the spot, even if it's not your patient, which develops your clinical skills for hand therapy. (Participant 6)

The CoP also supported the development of clinical reasoning. One participant explained:

Yes, although each hand is different, familiarizing yourself with other hand injuries will always improve your clinical reasoning! (Participant 3)

Including CoP members with more advanced expertise who can guide clinical reasoning was deemed to be important:

… It is so important to find people who can provide you with accurate clinical reasoning when you are unsure of where to go! (Participant 5)

Theme 3: Grounding

In addition to providing support and facilitating learning, feedback suggested that participating in the CoP was professionally and contextually grounding.

Occupational identity: First, the CoP supported some participants' professional identity as occupational therapists:

It was also striking how it changed the way I look at hand therapy and the role of OT. It made me realize our role better, and have more interest in it than coming in. It made me want to be an OT! Which is really important realization for a Community Service OT. (Participant 7)

When asked what advice to give future community service occupational therapists for providing hand therapy, retaining this occupational identity was prioritised by one participant:

Sometimes when you start seeing hand patients you get really overwhelmed and you feel like you don't know anything but don't forget what you learned at varsity. You do know the basics. You might have to brush up on some of the technical skills and knowledge but don't let that overshadow what you already know about occupations! Don't be afraid to brainstorm and experiment with your patients in terms of finding new ways of doing things but make sure that you're always focusing on the occupation. Don't lose your identity as an OT while you're trying to improve on your biomechanical knowledge and skills. (Participant 2)

Occupational therapy values: The CoP also served to consolidate occupational therapy values for participants. Participants shared that the CoP was helpful:

- '[to] always think back to the patient's goals' (Participant 3)
- '[for] learning to remain client centred' (Participant 4)
- '… to remember the hand belongs to a person and treat the person holistically' (Participant 4).

Responsive: The CoP was also contextually grounding in that it responded flexibly to the context-specific and emerging needs of novice practitioners. These included topics they were struggling with, guidance on when to terminate treatment, and how to deliver hand therapy in a community setting. Highlights for participants were:

… Having people come and talk to us about topics we are struggling with. (Participant 2)

It was great that she covered the basics of neuro … first and then gave a lot of tips, which is so helpful coming from a super experienced OT. Her reassurance on when to discharge patients and how to remove yourself from things you really cannot help with meant so much to me especially because we are inexperienced [and] you don't know when to stop trying to help. It worked well that she gave time for us to ask questions because then she could identify what we really struggle with. [The neuro-hand] was also one of the sessions [that] we asked for specifically which I think is important for the hands CoP – identifying [what] the members needs are and then responding to that, as was done. So it's not just another lecture or course but it is specific. (Participant 6)

… to [learn] about hand therapy and how to integrate it into the community setting. (Participant 4)

Recommendations for future virtual communities of practice

When asked if they would recommend a CoP as a vehicle for learning for community service occupational therapists, the affirmative response was unanimous:

Definitely!!! … You really come in knowing (nothing) … I felt guilty about how little I knew and how bad my therapy was … so being in a group with other people who are in the same boat as me was so helpful … It was such an amazing experience. In writing the handover for the new Community Service occupational therapist coming to our hospital, I've been recommending all the courses that I went on this year that I found helpful and it's a little bit sad that I can't recommend this one because it definitely was the most helpful and provided the most support. (Participant 2)

Participants also provided some helpful feedback around future VCoP logistics. Participants frequently had difficulty accessing the Microsoft Teams platform and recommended that a more accessible platform (Zoom or WhatsApp) be used for the CoP. They recommended that a CoP have 5–10 members and meet every 1–2 weeks for a formal 60–90-minute meeting.

Discussion

This article describes novice occupational therapists' experience of the benefits of a VCoP to support hand therapy practice while completing a mandatory service year in rural or underserved clinical settings in South Africa. Three themes were generated from analysis, demonstrating that the VCoP was a *versatile support*, *a vehicle for learning*, and both professionally and contextually *grounding*. Although VCoPs are not the only form or format in which social learning and support can be facilitated, findings found strong agreement with existing literature around the benefits of VCoPs. This, along with the recommendations that participants provided for future VCoPs, is therefore discussed in this section.

A versatile support

A key benefit of the VCoP in this study was the experience of support. This clear finding is less overtly expressed in previous occupational therapy CoP literature. The participant vignettes reference the complex and resource-constrained settings in which participants worked that contributed to their need for support. It is likely that the need for support for many of the participants was linked to their professional isolation, with many of them working as a sole occupational therapist or in a team with limited hand therapy expertise. Isolation, both social and professional, is a common challenge experienced by health professionals, which can be powerfully mitigated by VCoPs[21].

Quotes from participant experiences suggest that the need for knowledge and the need for support are closely connected. The expanse of social support literature demonstrates the evolution and complexity of the concept. However, early conceptualisations of types of support identify emotional support (which fosters feelings of comfort), cognitive support (which assists understanding through information, knowledge or advice) and material support (which contributes practical goods or services to help solve problems)[22]. Delineating these aspects of support highlights the overlap between the learning needs and support needs of participants, suggesting that the tacit need for support is facilitated during the learning process. The literature also identifies the significance of the timing of support, which was a very important factor for participants in this study, who often required immediate support[22]. It is timely access to knowledge and expertise that sets VCoPs apart from other models of knowledge delivery[23].

A vehicle for learning

Learning is central to the purpose of CoPs and thus it is not surprising that learning was integral to participants' experience. Contemporary CoP theory, as well as seminal social learning theory proposed by Vygotsky, highlight the importance of communities to effective learning[24,25]. There is growing evidence within the occupational therapy literature supporting the use of CoPs for learning, with a 2017 literature review reporting emerging use of CoPs within occupational therapy[26]. In the available articles (*n*=5), there was evidence that CoP's facilitated knowledge sharing,

knowledge translation, learning through boundary crossing, and reflection. This early evidence highlighted the potential of CoPs for the continuous professional development of occupational therapists[26]. More recent work with occupational therapists working in an acute paediatric setting in Brazil has added weight to this recommendation: participation of nine occupational therapists in a CoP demonstrated how it utilised dialogue and collaborative reflection for knowledge development and generated practical knowledge for acute paediatric practice within the group[27]. The latter findings also echo the subthemes in this study that speak to a CoP being a means to accessing *resources* and for providing opportunities to apply knowledge to one's own practice context.

The shared or mutual nature constituted a clear feature of participants' knowledge acquisition in this study. This co-learning process is indeed a hallmark of CoPs[21], and engaging in 'thinking together' is argued to be at the heart of COPs[28]. Participants in this study highly valued being able to engage with colleagues with hand therapy expertise. Barry and colleagues' review of CoPs for facilitating occupational therapists' continuous professional development did not overtly mention the importance of having experts or specialists within the group but rather highlighted the value of diversity in perspectives in the group[26]. Similarly, explicit inclusion of 'experts or specialists' within the group is not highlighted by CoP theorists[29], perhaps because the theoretical positioning of CoPs privileges the expertise of all and the co-construction of knowledge and meaning.

Grounding

The affirming impact of the CoP on occupational therapy values and identity reported in the third theme of the current study was an unanticipated finding for the first author, who had engaged with participants for a prolonged period. Although unexpected, this finding should not be surprising. Communities of practice are considered a platform for the social theory of learning[24] in which learning constitutes an individual's social formation, and thus results in identity change[28]. Wenger-Trayner explains the link between learning and identity formation: CoP theory views learning and the 'becoming of the learner' (p. 145) as aspects of the same process[25]. Instead of the acquisition of knowledge and skills alone, the theory places the negotiation of meaning at the centre of learning. Because negotiating meaning involves 'becoming a certain person in a certain social context' (p. 145), identity formation becomes part of learning[25]. Occupational therapists' professional identity continues to be an issue raised in international[30] and South African[31] literature and so this finding is a particularly important one. Turner and Knight's review of occupational therapists' professional identity presents reasons for and consequences of the profession's struggle with identity. The authors identify a poor grounding in the paradigm of occupation as being largely responsible for occupational therapy's difficulty in establishing its identity. Interestingly these researchers identify CoPs as the vehicle through which occupation-based practice, and the profession's identity, can be reinforced[32]. Findings from the study of the aforementioned Brazilian paediatric occupational therapists CoP validate this conclusion. They found the CoP not only produced professional practice knowledge through dialogue and reflection, but also provided a sense of belonging and affirmed participants' professional identity[33].

Evidence for the use of CoPs and VCoPs in occupational therapy is

slowly increasing while research around their use within other health settings is substantial[23]. Project ECHO is one example of a VCoP model used to improve healthcare outcomes, initially designed to address service disparities in rural and remote areas[34]. The model seeks to make expert knowledge accessible 'at the right place, at the right time'. ECHO participants join a VCoP in which the group shares guidance, feedback, and support. During ECHO sessions, group members present clinical cases to one another (including a specialist within the group) for discussion. A non-hierarchical 'all teach, all learn' philosophy facilitates reciprocal learning where best practice is applied to participants' local contexts[34].

Innovation: an unexpected by-product

Innovation is also a common by-product of the knowledge construction that happens in CoPs[17]. Innovation was not reflected in the data analysed for this study but the group developed a practice innovation shortly after data collection was completed. During the course of the study, participants had identified the need for appropriate hand therapy resources and equipment that was portable and could be used for assessment and treatment of a diverse caseload. In early 2022, shortly after the completion of the study, participants and the first author developed a practice innovation, Hand Therapy On The Move (HT-OTM). HT-OTM is a fully equipped hand therapy station that can be carried as a backpack or pulled on wheels. The innovation was piloted in two rural locations in South Africa and has been received with great interest at both local and international conferences[35]. Opportunity for enabling access to the therapy resource through public health tender processes in South Africa, and sharing the innovation with international colleagues for replication in their settings, is being explored. This is an example of simple ways that CoPs can contribute to progress in a field of practice[17].

Recommendations for future use of VCoPs

It is recommended participant feedback be used to refine the VCoP model used in this study, and upscale it for implementation amongst rehabilitation personnel in South Africa. Participants provided recommendations around the optimal VCoP size, the frequency and duration of scheduled meetings, and preferred electronic platforms. It is necessary to make overt that the success of VCoPs is dependent on basic resources: protected time to participate, electricity and adequate internet bandwidth[23], and an electronic device for each member. Participants in this study, particularly those in more rural settings, sometimes experienced connectivity difficulties that affected their participation in meetings. Scheduled load-shedding, and unforeseen changes to these schedules in South Africa, means that participant access to online platforms can easily be disrupted. VCoP members will need to factor these variables into group planning and logistics to mitigate the impact of these disruptions.

A strong sense of participant satisfaction with the VCoP in this study motivated the separate analysis of the evaluation survey, as well as this article. Key components of the VCoP that contributed to expressed satisfaction were access to real-time support facilitated by use of WhatsApp, access to expertise in the group, and the flexible format that allowed learning to address emerging needs in the group. Satisfaction with the VCoP was largely a supplementary finding in this study but is a construct that should be overtly considered in VCoP design. There are higher levels of

user satisfaction when the collaborative learning enables participants to learn about patient diagnosis and treatment, when participants develop trusted networks, and when the mutual learning process strengthens members' 'share capital'[21]. The perceived effectiveness, efficiency and knowledge acquisition that a virtual platform enables have also been identified as variables significantly associated with member satisfaction that should be considered in VCoP planning and implementation[21].

Closely linked to the importance of user satisfaction is the importance of evaluating the outcomes of CoPs. This study evaluated participants' experience of a VCoP while delivering hand therapy as a novice generalist practitioner, which was suited to the study purpose and aims. What was not considered, however, was the impact that the VCoP had on the hand therapy services that participants delivered. This may be considered a limitation but represents an important opportunity for future research.

A lack of rigour in published methods of evaluating the impact of CoPs on public health practice[23] was reported in a 2017 systematic review. The review of the evidence concluded that CoPs that facilitate reflective practice, diverse networking and structured problem-solving may provide effective support for public health professionals. However, further work was recommended to establish rigorous methods to evaluate the impact of CoPs on the health of populations[23]. A recent publication[36] demonstrates how this gap can be addressed: ECHO Ontario Mental Health programme has proposed an implementation framework for VCoPs, which combines Proctor's implementation outcomes[37] with ECHO project expertise. The framework considers eight implementation outcomes, along with respective success thresholds, for the evaluation of acceptability, adoption, appropriateness, cost, feasibility, fidelity, penetration, and sustainability[36].

Strengths and limitations

A number of strengths and limitations to this study are acknowledged. To our knowledge, this is the first South African study to report on the use of VCoPs for strengthening the capacity of rehabilitation personnel. The questionnaires included in the evaluation were developed towards the end of the broader study's data collection period and were informed by the researcher's active participation with VCoP members. They were also partly focused on the main research purpose rather than specifically targeting an evaluation of the CoP and its benefits. This may have contributed to assumptions that limited the objectivity of questions. However, from the researcher's constructivist perspective and the reflexive thematic analysis approach taken, responsively developing questions based on prolonged engagement with participants may also be considered a potential strength.

While considering both perspectives, future CoP evaluation strategies should be evidence-informed and broadly planned prior to the commencement of the group. In addition, the questionnaire did not undergo review by experts, which would have strengthened its content validity and should be ensured in future research. Finally, two participants chose not to participate in the evaluation. It is possible that these participants' experiences of the group were less positive, reducing the range of experiences included in the data. Building opportunities to complete evaluations into scheduled group sessions may mitigate this

challenge in the future. It is also acknowledged that gathering data through open-ended survey questions potentially restricted the depth of qualitative data captured in this study.

Conclusion

'To achieve healthy lives and wellbeing for all, the right knowledge must get to the right place at the right time for those who need it most' (p. 634)[23]. Results from this study contribute to a growing body of evidence supporting the use of VCoPs to achieve this imperative. This study also demonstrates how a VCoP can simultaneously be used as a collaborative data collection tool while addressing the needs of participants for support, learning and grounding within their professional identities and practice contexts. As demonstrated in this study, CoPs can also act as hubs for contextually responsive innovation. Upscaling the implementation of VCoPs to support the practice of rehabilitation personnel working in rural and underserved contexts is recommended as they extend access to services to populations that need it the most.

REFERENCES:

1 Rural Health Advocacy Project. *Rural-proofing for health: guidelines.* 2015. Available: web link (Accessed 26 April 2024).

2 Reid SJ. Community Service for health professionals: human resources. *South African Health Review* 2002; 135-160.

3 Reid S. 20 years of community service in South Africa: what have we learnt? *South African Health Review* 2018; **2018(1):** 41-50. Available: web link (Accessed 5 May 2024).

4 Harrison D. *An overview of health and health care in South Africa 1994–2010: priorities, progress and prospects for new gains.* Available: web link (Accessed 26 April 2024).

5 van Stormbroek K, Buchanan H. Novice occupational therapists: Navigating complex practice contexts in South Africa. *Australian Occupational Therapy Journal* 2019; **66(4):** 469-481. DOI link, PMid:30697768

6 Struwig N, Van Stormbroek K. Support , supervision, and job satisfaction: Promising directions for preventing burnout in South African community service occupational therapists. *South Africa Journal of Occupational Therapy* 2023; **53(1):** 67-80. DOI link

7 van Biljon H. *Transforming the vocational rehabilitation services of occupational therapists in Gauteng public healthcare through action learning action research.* Johannesburg: University of the Witwatersrand, 2016.

8 van Stormbroek K, Buchanan H. Novice therapists in a developing context: Extending the reach of hand rehabilitation. *Hand Therapy* 2017; **22(4):** 141-152. DOI link

9 Norman R, Matzopoulos R, Groenewald P, Bradshawa D. The high burden of injuries in South Africa. *Bulletin of the World Health Organization* 2007; **85(9):** 695-702. DOI link, PMid:18026626

10 Schultz G, Mostert K, Rothmann I. Repetitive strain injury among South African employees: The relationship with burnout and work engagement. *International Journal of Industrial Ergonomics* 2012; **42(5):** 449-456. DOI link

11 Jeebhay M, Jacobs B. Occupational health services in South Africa . *South African Health Review* 1999; **29:** 257-276. Available: web link (Accessed 26 April 2024).

12 De Klerk S. *Occupational therapy assessment of the upper limb: trends in South Africa.* Stellenbosch: Stellenbosch University, 2014.

13 The South African Society of Hand Therapists. *The South African Society of Hand Therapists members booklet.* Available: web link (Accessed 6 June 2023).

14 Wenger-Trayner E, Wenger-Trayner B, Reid P, Bruderlein C. *Communities of practice within and across organizations: a guidebook.* 2nd ed. Sesimbra: The Social Learning Lab., 2023.

15 Sibbald SL, Burnet ML, Callery B, Mitchell JI. Building a virtual community of practice: experience from the Canadian Foundation for Healthcare Improvement's policy circle. *Health Research Policy and Systems* 2022; **20(1):** 95. DOI link, PMid:36050686

16 Shaw L, Jazayeri D, Kiegaldie D, Morris ME. Implementation of virtual communities of practice in healthcare to improve capability and capacity: a 10-year scoping review. *International Journal of Environmental Research and Public Health* 2022; **19(13):** 7994. DOI link, PMid:35805649

17 Barbour L, Armstrong R, Condron P, Palermo C. Communities of practice to improve public health outcomes: a systematic review. *Journal of Knowledge Management* 2018; **22(2):** 326-343. DOI link

18 Braun V, Clarke V. Qualitative research in psychology using thematic analysis in psychology. *Qualitative Research in Psychology* 2006; **3(2):** 77-101. DOI link

19 Braun V, Clarke V. One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology* 2021; **18(3):** 328-352. DOI link

20 Krefting L. Rigor in qualitative research: the assessment of trustworthiness. *American Journal of Occupational Therapy* 1991; **45(3):** 214-222. DOI link, PMid:2031523

21 Jiménez-Zarco AI, González-González I, Saigí-Rubió F, Torrent-Sellens J. The co-learning process in healthcare professionals:

Assessing user satisfaction in virtual communities of practice. *Computers in Human Behavior* 2015; **51:** 1303-1313. DOI link

22 Jacobson DE. Types and timing of social support. *Journal of Health and Social Behavior* 1986; **27(3):** 250-264. DOI link

23 Struminger B, Arora S, Zalud-Cerrato S, Lowrance D, Ellerbrock T. Building virtual communities of practice for health. *Lancet* 2017; **390(10095):** 632-634. DOI link, PMid:28816126

24 Vygotsky L. *Mind in Society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press, 1978.

25 Farnsworth V, Kleanthous I, Wenger-Trayner E. Communities of practice as a social theory of learning: a conversation with Etienne Wenger. *British Journal of Educational Studies* 2016; **64(2):** 139-160. DOI link

26 Barry M, Kuijer-Siebelink W, Nieuwenhuis L, Scherpbier-de Haan N. Communities of practice: A means to support occupational therapists' continuing professional development. A literature review. *Australian Occupational Therapy Journal* 2017; **64(2):** 185-193. DOI link, PMid:27704565

27 Mfammed IC, Sa F, Galheigo SM, Braga CP, Mieto FSR, Parreira FV, et al. Exchanging knowledge within a community of practice: toward an epistemology of practice in occupational therapy paediatric hospital care. *Cadernos Brasileiros de Terapia Ocupacional* 2017; **25(3):** 449-459. DOI link

28 Pyrko I, Dörfler V, Eden C. Thinking together: What makes CoPs work? *Human Relations* 2017; **70(4):** 389-409. DOI link, PMid:28232754

29 Wenger-Trayner E, Wenger-Trayner B. *Introduction to communities of practice.* 2015. Available: web link (Accessed 26 April 2024).

30 Struminger B, Arora S, Zalud-Cerrato S, Lowrance D, Ellerbrock

T, Barbour L, et al. A debate on the professional identity of occupational therapists. *British Journal of Occupational Therapy* 2015; **51(1):** 776-791. DOI link, PMid:35135565

31 Dayal H. Capacity of the SA public health sector to deliver rehabilitation services: an institutional analysis. *Public Heal Association of South Africa Newsletter* 2012; **15 November:** 1-4. Available: web link (Accessed 26 April 2024).

32 Turner A, Knight J. A debate on the professional identity of occupational therapists. *British Journal of Occupational Therapy* 2015; **78(11):** 664-673. DOI link

33 Galheigo SM, Braga CP, Magalhães L, Kinsella EA. An occupational therapy community of practice within pediatric acute care: Fostering professional, social and cultural capital in resource challenged settings. *Brazilian Journal of Occupational Therapy* 2019; **27(4):** 776-791. DOI link

34 The University of New Mexico. *Project ECHO.* Albuquerque: University of New Mexico, 2023.

35 van Stormbroek K, Westig M, Holman L, Button A, Folly A, Palmer D, et al. *Hand therapy on the move: taking therapy to harder-to-reach communities.* Presentation at IFSHT, Combined Congress. London. 2022. Available: web link (Accessed 26 April 2024).

36 Serhal E, Pereira C, Armata R, Hardy J, Sockalingam S, Crawford A. Describing implementation outcomes for a virtual community of practice: The ECHO Ontario Mental Health experience. *Health Research and Policy Systems* 2022; **20(1):** 17. DOI link, PMid:35135565

37 Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons G, Bunger A, et al. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental Health and Mental Health Services Research* 2011; **38(2):** 65-76. DOI link, PMid:20957426