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Primary care provider perspectives on a rehabilitation guidance tool for low-resource contexts

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Background: Primary healthcare facilities in low-resource settings have an inadequate rehabilitation workforce. The existing primary care providers (PCPs) have low awareness of population rehabilitation needs and are ill-equipped to provide basic rehabilitation services in the absence of rehabilitation professionals. A key strategy to address the unmet rehabilitation needs involves empowering existing PCPs to identify rehabilitation needs and provide basic rehabilitation services.

Aim: This study explored the perceptions of PCPs about the acceptability, suggested improvements and potential users to consider when developing and implementing the proposed innovative tool to help PCPs identify, refer and provide basic rehabilitation interventions in low-resource settings.

Setting: Ten systematically selected primary healthcare (PHC) facilities in two districts in Manicaland, Zimbabwe and two districts in the Eastern Cape, South Africa comprised the study setting.

Methods: A descriptive, exploratory qualitative design using individual semi-structured interviews with 37 PCPs. Data were transcribed and thematically analysed using Atlas.ti 22.2.

Results: The findings revealed five dominant themes: (1) perceived benefits of the proposed tool; (2) concerns about the proposed tool; (3) suggestions on improvements to the tool; (4) suggestions on training and (5) potential users of the rehabilitation guidance tool.

Conclusion: This tool provides a potentially viable strategy for building the rehabilitation capacity of PCPs in these low-resource settings. The suggestions provided regarding improvements to the design and content of the tool and training will be considered in the continuing development and implementation phases.

Contribution: The study builds on previous work on developing low-cost innovative interventions for strengthening primary care rehabilitation in low-resource settings.

Keywords: low-resource; primary healthcare; rehabilitation; South Africa; qualitative; Zimbabwe.

Introduction

The global demand for rehabilitation as a health strategy is significant and growing. However, health systems in low-resource primary healthcare (PHC) settings, where rehabilitation services must be provided, are typically understaffed, under-resourced and fragmented (Langlois et al. 2020). For example, in South Africa, 6% of the rehabilitation workforce (which typically includes Occupational Therapists [OT], Speech and Language Therapists [SLT] and Audiologists and Physiotherapists [PT]) works in PHC (Conradie, Berner & Louw 2022). Additionally, the current primary care providers (PCPs), such as nurses and doctors, lack awareness of the rehabilitation needs of the population and do not have the necessary skills to provide basic rehabilitation services without the presence of rehabilitation professionals (Charumbira et al. 2024). The lack of contextually relevant clinical guidance affects the ability of PCPs to provide quality rehabilitation services (Conradie et al. 2022).

A key strategy to address the unmet rehabilitation needs in low-resource settings is to empower existing PCPs to identify rehabilitation needs and provide basic rehabilitation services (Joshi 2019). The Rehabilitation Guidance Tool (RGT) is being developed to support this goal, following stages similar to those used in the development of the Adult Primary Care (APC) (initially known as Primary Care 101/PC 101 or Practical Approach to Care Kit/PACK) to provide algorithm-type clinical decision support for PCPs in several low-resource settings including South Africa (Cornick

et al. 2018). However, unlike the APC, which is a symptom-based tool that covers the management of chronic conditions in adults, the RGT will be a functioning-based tool. This is because rehabilitation takes a holistic approach to healthcare, considering not just the diagnosed health condition but also its impact on a person's ability to function in daily life (Wade 2020). Therefore, simple rehabilitation treatment guidelines and clinical decision support systems will be incorporated into the RGT to address functioning problems that are associated with chronic conditions contributing to greater disability in selected countries. The tool will facilitate reference and information gathering on rehabilitation from linked peer-reviewed scientific or medical journals. Thus, in the absence of rehabilitation professionals, PCPs can use the RGT to access practical evidence-based guidance for managing basic functioning problems that primary care patients present with, regardless of their health condition.

Preliminary work for the development of this RGT involved the development of a secure web-based application named *Rehab4All* which has already been described (Charumbira et al. 2022a). The *Rehab4All* application provides an innovative, online method of capturing and synthesising context- and country-specific data from published peer-reviewed articles on the prevalence of functioning problems. According to the International Classification of Functioning, Disability and Health (ICF), functioning problems include impairments of body function and structure, activity limitations and participation restrictions (World Health Organization 2013). The application also allows for the extraction of data on the study and participant characteristics to allow for further synthesis. Furthermore, the functioning problems are classified according to the ICF domains and categories (World Health Organization 2013). The *Rehab4All* application provides an overview of the data on its dashboard linked to the article sources and allows for the data to be exported for further analysis in Microsoft Excel if this step is required. The piloting of the *Rehab4All* application was performed using published data on functioning in adult populations from South Africa (Charumbira, Berner & Louw 2022b) and Zimbabwe with at least one of the health conditions contributing to the greatest disability, as indicated by Global Burden of Disease 2019 data on Years Lived with Disability (YLDs) (GBD 2019 Diseases and Injuries Collaborators 2020).

The next stage in the development of the RGT involves linking the evidence on assessment and treatment to the identified key functioning problems from the *Rehab4All* application. However, this evidence needs to be practical and contextually relevant to patients who seek care from the PHC facilities in these settings (Louw et al. 2018). Collaborating with the PCPs who are at the coal face of primary care services during the design and development of the intervention facilitates the development of a detail-oriented and patient-centred innovative application whose design and content are driven by the lived experiences of its end-users (Maurer et al. 2022). This may contribute towards the successful uptake and sustained use of the innovative RGT. Besides the patients, an important stakeholder population includes the healthcare providers in these settings. Building on the authors previous work, this study aims to explore the perspectives of PCPs on the acceptability of the RGT and to identify possible improvements to enhance the usability of the RGT in low-resource PHC settings. The study objectives were to gather feedback from PCPs on the current version of the RGT and to identify potential benefactors of the RGT within these settings. This information will be beneficial in supporting the further development and refinement of the RGT and its implementation strategy.

Research methods and design

Study design

This study used a descriptive, exploratory qualitative design to obtain new insights into the perspectives of PCPs in the Manicaland province of Zimbabwe and Eastern Cape province of South Africa to inform the design and development of an innovative RGT for enhancing rehabilitation in PHC in low-resource settings. These provinces represent the poorer provinces in the countries thus providing populations with limited access to quality healthcare who would benefit most from the RGT. The report followed the standards for reporting qualitative research (SRQR) (O'Brien et al. 2014).

Reflexive analysis and researcher characteristics

Qualitative research acknowledges the fact that each researcher brings a unique perspective to the study. The primary investigator (PI) (M.Y.C.) performed reflexive analysis (through documentation of continual reflections on the research process) to improve study confirmability, acknowledging any influence or personal biases that may have affected study results. The PI's experience working as a PCP in similarly low-resourced settings may have added to her understanding of the meanings behind participants' accounts. To contextualise the methodological and analytical decision-making, thematic analysis, involving familiarisation with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report, was employed (Nowell et al. 2017). The PI's reflections and insights from her background were systematically documented and critically examined to identify any potential biases and ensure they were accounted for in the analysis. The interviewer did not have any prior relationship with the participants, which helped to minimise any influence on the responses.

Study setting

The study was conducted in ten systematically selected PHC facilities in two of the seven districts of Manicaland (Mutare Urban and Makoni) and two of the eight districts of the Eastern Cape (Amathole and Buffalo City). The selection was carried out according to predetermined criteria including the demographic setting (urban or rural) and availability of rehabilitation services. The Eastern Cape is the second-largest province in South Africa and the fourth most populous (7.2 million people in 2022) (StatsSA 2022). About 82% of its

inhabitants speak isiXhosa and over 60% live in rural areas (StatsSA 2022). The Eastern Cape has remained the poorest South African province over the last two decades (Vollmar, Ostermann & Redaèlli 2015). Manicaland is the second most populous province in Zimbabwe with just over 2 million people, according to the 2022 population census (ZimStat 2022). The most dominant language is Shona although each district has its own dialect. ZimStat (2022) reported Manicaland to have poverty rates of more than 70%, largely affecting the rural areas, where 84.6% of its population resides (ZimStat 2022).

Both countries' PHC systems are largely nurse-led, with medical officers in some PHC facilities (Ray & Masuka 2017). Community health workers (CHWs) also visit households to identify health risks and provide linkages between the communities and the PHC facilities (Bresick, Von Pressentin & Mash 2019). The provision of primary rehabilitation services in both settings is largely dependent on the district health system. In Zimbabwe, rehabilitation technicians (RTs) are healthcare professionals who work under the supervision of licensed therapists to assist in providing basic patient care and therapy services (Finkenflügel 1991). However, because licensed therapists are rarely found at district hospitals, especially in rural areas, RTs are often found manning the district rehabilitation departments and are expected to provide primary care services by means of outreaches. South Africa has a community service programme which requires recently graduated therapists to serve at least 1 year in underserved areas (Ned, Cloete & Mji 2017). Hence, rural district hospitals are often served by community-service therapists who are expected to provide outreach services to PHC facilities. Furthermore, South Africa has several PHC facilities that provide outpatient rehabilitation services on an appointment basis.

Participant sampling and recruitment

Systematic sampling was used to select one urban and one rural district from South Africa and Zimbabwe. One PHC facility was selected from each geographical setting (rural, urban). An additional criterion was whether rehabilitation services were offered at the facility. Purposive sampling was used to select a variety of PCPs (e.g., nurses, doctors and speech therapists) who had the knowledge and experience in PHC to provide informative responses (Moser & Korstjens 2018). Students and PCPs with less than 6 months of experience in PHC were excluded from the study. A maximum variation approach was used to select key informants by ensuring that all professions, levels of experience and geographical locations (urban or rural) of PHC facilities were represented. The participants were recruited verbally followed by written information about the study. Snowballing was used to recruit CHWs through the primary care nurses (PCNs). Participant sampling continued until data saturation was achieved in which no new insights emerged from additional interviews and enough information was gathered to answer the research questions (Saunders et al. 2018).

Data collection

A semi-structured interview guide was developed according to a previous study that sought to obtain feedback on a similar primary care guidance tool in South Africa (Cornick et al. 2018). Questions asked included:

- Do you think this tool would be of value in your setting? How do you think this tool can be used to improve rehabilitation service delivery in your facility? Who can use it? When?
- What needs to be done to improve the way it looks?
- What additional information may be added to the tool? Are these the functioning problems that people present with at primary care? Can you add?
- What needs to be done to improve the usability of the tool? What is your suggestion for improving the flow?
- Is there anything else I have not asked you that you would like to add?

Professional translators forward- and back-translated the tools between the two vernacular languages (Shona and isiXhosa) and English. Internal testing of the preliminary interview guide was performed by asking fellow researchers to evaluate for ambiguities, leading or irrelevant questions. Simpler terms were required for the term 'functioning problems'. A pilot telephonic interview was conducted at one PHC facility in both South Africa and Zimbabwe to confirm the relevance of the content, ensure the coverage of all objectives and identify the need to reformulate questions. The pilot telephonic interviews also checked the logical flow, timing and clarity of the RGT presentations. Between June 2021 and January 2022, the PI, who is experienced in qualitative research and conducting interviews, carried out face-to-face interviews and telephonic interviews in the participant's language of choice (English, Shona or isiXhosa) lasting between 20 min and 45 min. A research assistant (T.C., a physiotherapist with experience in qualitative research) was present for quality assurance and note-taking. Before each interview, the PI presented the prototype *Rehab4All* application from her laptop for 5 min. At times, poor network connectivity or electricity outages disrupted the presentation but transitioning to using the printed paper format ensured continuity. The version of the RGT that was presented was concise to ensure that it could be understood within a short time. After the presentation, participants were given time to ask questions about the RGT. Thereafter, the interview guide was used to cover themes of interest with additional probing questions for clarity and understanding. No repeat interviews were required. Member checking was carried out during the interviews by clarifying responses to ensure participant expressions were accurately understood.

Data processing and analysis

Professional transcribers translated and transcribed the recordings intelligently verbatim. Further member checking was carried out by returning transcripts to participants who had provided initial consent to be recontacted via WhatsApp

for verification. All data were anonymised by removing any names from the transcripts. To prevent a breach of confidentiality, electronic recordings and identifying information were kept in an access-restricted location at the research institution.

Interview transcripts were analysed using inductive thematic content analysis (Nowell et al. 2017). Data were managed using Computer Assisted Qualitative Data Analysis (CAQDAS) software, Atlas.ti. version 22.2®. The PI conducted the initial coding of the transcripts by repeatedly reading transcripts to identify common conceptual themes and patterns emerging from the data. Two reviewers (K.B. and Q.L.) each read and coded three different transcripts. Several discussions of the preliminary coding were carried out by all authors to share perspectives and understanding of participants' accounts. Differences were resolved through discussion until a consensus was reached. A codebook was created, which was applied to the rest of the transcripts. Thus, an iterative process of identifying and adjusting code names and definitions, identifying, and adjusting recurring concepts and patterns, and organising them into themes and categories, was followed.

Trustworthiness

Credibility was ensured by employing purposive sampling and presenting the various viewpoints held by the participants. Investigator triangulation was carried out by three researchers making coding and analysis decisions based on a subset of transcripts. Transferability was enabled through detailed descriptions of the participants, contexts and research methods used in this study. To ensure dependability, exemplary quotations from most participants were provided to support the emerging themes. Member checking during interviews and return of transcripts for participants to check accuracy ensured confirmability. An audit trail was kept through detailed documentation of the research process.

Ethical considerations

Ethical clearance to conduct this study was obtained from the Stellenbosch University Health Research Ethics Committee (reference no.: S21/01/002) and the Medical Research Council of Zimbabwe (MRCZ/A/2916). All procedures performed in the studies involving human participants were in accordance with the ethical standards of the institutional and/or National Research Committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The Permanent Secretary to the Ministry of Health, Provincial Medical Directorate of Manicaland Province, District Medical Officers and PHC facility managers granted study permission in Zimbabwe. The Eastern Cape Department of Health, District Offices of the Department of Health and PHC facility managers granted study permission in South Africa. Written informed consent was obtained from each participant before the interviews.

Results

Participant characteristics

Thirty-seven participants took part in the study. These included 30 non-rehabilitation PCPs and seven rehabilitation professionals (six from the district and one from PHC). Table 1 summarises their demographic characteristics and duration of experience in PHC.

Main findings

The seven overarching themes and the related subthemes and categories derived from the participants' responses are summarised in Table 2. A narrative description of these findings is presented, along with exemplary quotations with the assigned participant identifiers (e.g., participant number, e.g., P1; participants' health profession, e.g., SLT; location of PHC facility e.g., rural).

Theme 1: Perceived benefits of the proposed tool

Subtheme 1.1: Useful in upskilling of rehabilitation professionals

Promote multidisciplinary team approach: The RGT was seen to foster collaborative learning among rehabilitation professionals from different disciplines. Regular in-service sessions were highlighted as valuable opportunities for rehabilitation professionals to share insights, enhance their skills and educate each other on assessment and treatment processes of complex patients. One participant suggested that rehabilitation professionals may use the RGT as follows:

> '[*P*]ut together a presentation to be able to teach everybody else on the team, either for their direct professionals to be improved in treating or for at least the rest of the team to be more aware of how to identify these patients and at least start a bit of a process with them.' (P24, SLT, rural)

This meant that the RGT could be a catalyst for idea generation and brainstorming within teams and facilitating discussions on patient management strategies.

Promotes evidence-based practice: Participants emphasised the importance of evidence-based practice in rehabilitation. The

TABLE 1: Study participant characteristics.

Variable	South Africa	Zimbabwe
Total participants	22	15
Median age	31	45
Median range	27–58	33–63
Years of experience in PHC		
Mean	5	16.7
Standard deviation	7.24	4.04
Primary care nurses (PCN)	11	13
Nurse assistants	4	0
Medical officer (MO)	1	0
Rehabilitation technicians/ assistants (RT)	1†	2†
Rehabilitation professionals	4†	0
Community health worker (CHW)	1	0

PHC, primary healthcare.

†, From district hospital (except one rehabilitation professional from South African PHC facility).

TABLE 2: Themes, subthemes and categories derived from the participants' responses.

Themes	Subtheme	Categories
1. Perceived benefits of the proposed tool	1.1. Useful in upskilling rehabilitation professionals	Promotes a multidisciplinary team approach
		Promotes evidence-based practice
		Provides support to inexperienced rehabilitation professionals
	1.2. Increases knowledge and awareness of rehabilitation among non-rehabilitation PCPs and patients	Useful in providing rehabilitation education to patients
		Useful in providing basic rehabilitation
		Useful in knowing which patients to refer to rehabilitation where available
2. Concerns about proposed tool	2.1. Does not protect scope of rehabilitation practice	-
	2.2. Limitations in the application of the tool	Level of clinical reasoning and rehabilitation skills required in provision of basic rehabilitation
		Does not fully address need for rehabilitation professionals in PHC
3. Suggestions to improve the RGT	3.1.Design/features/ functions	User-friendliness
		Accessibility
	3.2. Content	Definition of key terms
		How-to rehabilitation guidance
		Evidence
		Contextualised
4. Suggestions on training	4.1. Continuous training and support	-
5. Potential users of the RGT	5.1. Primary care providers	Doctors
		Nurses
		Assistant nurses
		Community/village health workers
	5.2.Community members	Carer to carers
		Community leaders
		Teachers

PCPs, primary care providers; PHC, primary healthcare; RGT, rehabilitation guidance tool.

RGT could serve as a catalyst for idea generation and brainstorming within teams, facilitating discussions on patient management strategies and promoting adherence to evidence-based interventions. One participant expressed this as follows:

> 'I think you can get quite stuck with creativity and managing patients and different ideas and how to address different things [*especially when they*] are isolated on an outreach … to be able to identify whether this patients is … a potential patient for therapy and … give [*patients*] something to take home from that first session because it might only be a month or two before you get to see them again.' (P24, SLT, rural)

Rehabilitation professionals within their own disciplines acknowledged tendencies to fall into 'clockwork'/routine patterns of care, especially when dealing with common conditions such as stroke. One primary care physiotherapist explained how the RGT would encourage rehabilitation professionals to do the following:

> '[*L*]ook at all the possibilities of what the issues could be because sometimes we look at a patient and we focus so much on conditioning and maybe just mobility and so by looking at the different functional aspects then I think it helps with just their rehabilitation.' (P16, PT, urban)

Thus, the tool will prompt a mindset shift that can lead to more innovative and effective rehabilitation strategies, ultimately benefiting patient care.

Provides support to inexperienced rehabilitation professionals in primary healthcare: The RGT was reported to be particularly beneficial for recently graduated community-service therapists, who were often isolated in these settings. One participant expressed:

> 'I think this is very helpful particularly for like com-serve therapists … there are so many facilities that are manned by com-serve therapists, there aren't senior people to consult, and I think this is a really good starting place to give therapists an idea of just how I get going with a patient with whatever the problem might be.' (P22, OT, rural)

This suggests that inexperienced therapists could use the RGT as a foundational resource for navigating patient care.

Subtheme 1.2: Increases knowledge and awareness of rehabilitation among non-rehabilitation primary care providers and patients

To provide evidence-based education to patients: Several participants cited the need to empower patients with information about rehabilitation, with one participant citing the following reason:

> '[*B*]ecause they don't know that there are physiotherapists people who are there just for your physical outlook.' (P11, PCN, urban)

This information would help to improve the patients' health literacy about their health conditions and functioning problems. One participant explained the following:

> 'I think the patient themselves we need to empower them on the need for rehabilitation ... and do away with their myths and misconception of believing in witchcraft. Because some of them they think if she is old, she has been bewitched so why take her to the hospital. We are wasting resources so let's just keep her until [*she*] dies.' (P7, PCN, rural)

However, the PCPs acknowledged that they do not have the knowledge to educate the patients on their fingertips and recognised the potential of the RGT in providing specific how-to guidance on rehabilitation which is not readily available from their current guidelines:

> 'Alright. I think you need to empower us with information ... [*laughs*]. We need a lot of information. Yes. So that we continuously educate our clients.' (P9, PCN, rural)

To provide basic rehabilitation to the patients in the absence of rehabilitation professionals: The tool was viewed as essential for non-rehabilitation PCPs, equipping them with practical guidelines for providing basic rehabilitation care. One participant highlighted:

> '[*I*]t [*the RGT*] will assist me in getting clients to be able to fulfil [*their*] daily activities.' (P13, PCN, urban)

Another participant expressed:

> '… it's difficult to treat those people presenting with needs of physios because there's not much that we know than to refer them. So now when we have got guidelines, before you can refer, you find a date for that person but for the meantime they can do such and such and such. Maybe even that day might come and then there's no need for them to be referred anymore. I think that would work if they could cover almost all the problems [*functioning problems*] that are listed.' (P14, PCN, urban)

To know which patients to refer to rehabilitation: One participant described some of the interventions they could learn:

> '[*S*]o that we won't refer all the patients to hospital just like that. Because some of the things ... here we can just offer, do cold compress, put them in this position, in the morning do this to their legs and their hands [*demonstrating exercises*].' (P7, PCN, rural)

This suggests that the RGT will help the PCPs reduce inappropriate referrals to rehabilitation professionals for basic rehabilitation interventions that they could offer. Thus, they would only refer to complex rehabilitation cases.

Primary care providers reported how they were often not aware of the scope of rehabilitation and thus overlooked the rehabilitation needs of patients with some health conditions. They highlighted the tool's potential to enhance PCPs' awareness of rehabilitation in addition to curative or medical model of care and streamline referral pathways, ensuring timely access to appropriate care. One participant said the following:

> 'This tool would assist [*nurses*] because it gives information … at times you will find that there was no need for medication … but just to tell that person what to do at home … because when you say you've got a pain here, what I think is Panado [*or*] Brufen [*pain medication*] to give you because it's something that will relieve the pain, I would not say you can exercise …' (P14, PCN, urban)

Theme 2: Concerns about proposed tool

Subtheme 2.1: Does not protect rehabilitation scope of practice

Participants, particularly rehabilitation professionals, referred to 'overstepping the boundaries' of other rehabilitation disciplines. One physiotherapist explained this concern as follows:

> '[*T*]aking on too much of another profession … and stepping over what we're actually qualified for … and then obviously we're still very lucky to have all of our professions.' (P23, PT, rural)

A few participants expressed concern regarding the negative impact on patient outcomes where non-rehabilitation PCPs provide rehabilitation services. One participant explained:

> 'Personally, I think the tool is a very good thing but giving it to the nurses mmm … I am against it. Why can't we have rehab personnel at rural clinics so that they will do the role of the rehab personnel because nurses are not trained to do rehab … It is like giving me the Edliz [*Essential Drug List in Zimbabwe*] and informing me that you have to give this patient medication doing it this way. Somewhere somehow, I will get lost. So, we will end up having more disability than we have now.' (P3, RT, urban)

Subtheme 2.2: Limitations in the application of the tool

Participants highlighted the limitations in the application of the tool because of contextual and systemic challenges. For example, while the RGT may assist in certain aspects of rehabilitation, it cannot fully replace the expertise and comprehensive care provided by rehabilitation professionals, especially in complex cases. Personal experiences were provided which indicated the need for clinical reasoning, cultural sensitivity and contextual adaptation to meet the needs of patients effectively. One participant related:

> 'I think trying to place this treatment within your own context might be a bit of a challenge, I'm just looking at this list, like things around erectile dysfunction, I think I've seen in my six years here maybe two patients with erectile dysfunction and it was terribly difficult to talk about with me being a female, it threw off the expected power dynamic completely.' (P22, OT, rural)

Some participants acknowledged broader systemic issues that will impact the effectiveness of the RGT, such as limited resources, lack of specialised facilities and socioeconomic factors affecting patients' access to care. One occupational therapist explained:

> '… because of the history of apartheid and the amount of money that's been put into this community in terms of leisure options, work opportunities, there are systemic problems that I can't change and so … you're sitting in front of a patient that says I'm struggling with drug use, firstly I don't have an inpatient rehab that I can refer you to … and I don't have alternatives for you in terms of how you would else fill your time and there are significant life stresses that you or I cannot fix on an individual level.' (P22, OT, rural)

A nurse raised a similar concern:

> 'Yes, it is something that we could use but if we use that tool, let's say for instance you start as a nurse by advising the patient to do this because we can do so much, then that doesn't assist the patient. Now let's say the patient needs to go to an occupational therapist, we don't have that here.' (P17, PCN, urban)

Thus, it would be important to address these underlying systemic issues alongside the proposed application of the RGT to effectively meet the patients' needs. However, a contrasting view was held by one participant who recognised the value of the tool, albeit with limitations:

> 'I think that at this point in our country any bit of assistance could help. Any direction that we try to take can help because right now it's poor. It's not enough that's being done. So, any small assistance is needed.' (P18, MO, urban)

Therefore, given the current inadequacies in the PHC system, the RGT will seem to be beneficial in these settings.

Theme 3: Suggestions to improve the rehabilitation guidance tool

Most participants who were familiar with the APC expressed confidence in the established guidelines as an effective roadmap for developing the RGT:

> '[*A*]s long as you follow the guides of the APC then you are on the right track.' (P27, CHW, rural)

This suggests that simple, brief, algorithm-type rehabilitation guidelines with pictures and illustrations be provided in both paper and digital format. Two themes were related to suggestions on improving the RGT: suggestions on design and suggestions on content.

Subtheme 3.1: Design/features/functions

Figure 1 provides a summary of this subtheme regarding the suggestions for the design of the RGT. The categories (user-friendliness and accessibility) are further divided into sub-categories along with exemplary quotes.

User-friendliness of the rehabilitation guidance tool: To enhance ease of understanding, particularly for PCPs who may encounter language barriers or unfamiliar terminology, features such as language translations or glossaries were suggested to facilitate comprehension and streamline communication with patients. Participants valued conciseness and suggested that it should provide a brief synthesis of evidence on basic rehabilitation rather than being too comprehensive and wordy. Participants cited the need for organised navigation to enhance efficient information retrieval, which may be particularly important in these overburdened settings where time is limited. Better organisation could be achieved by incorporating features such as colour-coding, flow charts, table of contents and pictures. The RGT's user-friendliness could also be improved by tailoring it to accommodate various levels of medical training and educational backgrounds, from laypersons to specialists.

Accessibility of the rehabilitation guidance tool: Considering the varied barriers and facilitators to using the RGT within the contexts, such as lack of technical skills and availability of devices, the tool needed to be accessible in both digital and paper formats. Furthermore, the tool had to be accessible in a manner that would not distract the patient, for example, some patients were uncomfortable with PCPs using their phones during consultations.

Subtheme 3.2: Content

Figure 2 provides a summary of this subtheme regarding the suggestions on the content of the RGT. Exemplary quotes are provided to support the categories.

Definition of key terms: Participants suggested that a glossary of terms would be important in making sense of the information in the RGT. They specifically highlighted the need for clear definitions of medical terms that may be unique to the rehabilitation field.

How-to-rehabilitation guidance: Participants highlighted the need for practical guidance on identifying and providing basic rehabilitation interventions. Clear guidance was needed on identifying patients with functioning problems, knowing where and when to refer patients to rehabilitation, and basic rehabilitation interventions such as exercises.

Evidence: Participants requested that the information in the RGT be linked to evidence-based sources such as clinical practice guidelines or peer-reviewed articles for further research.

Contextualised: Several participants pointed out that this information from the RGT needs to be contextually relevant considering the available resources and priority areas for rehabilitation. The use of the ICF was valued in adapting to

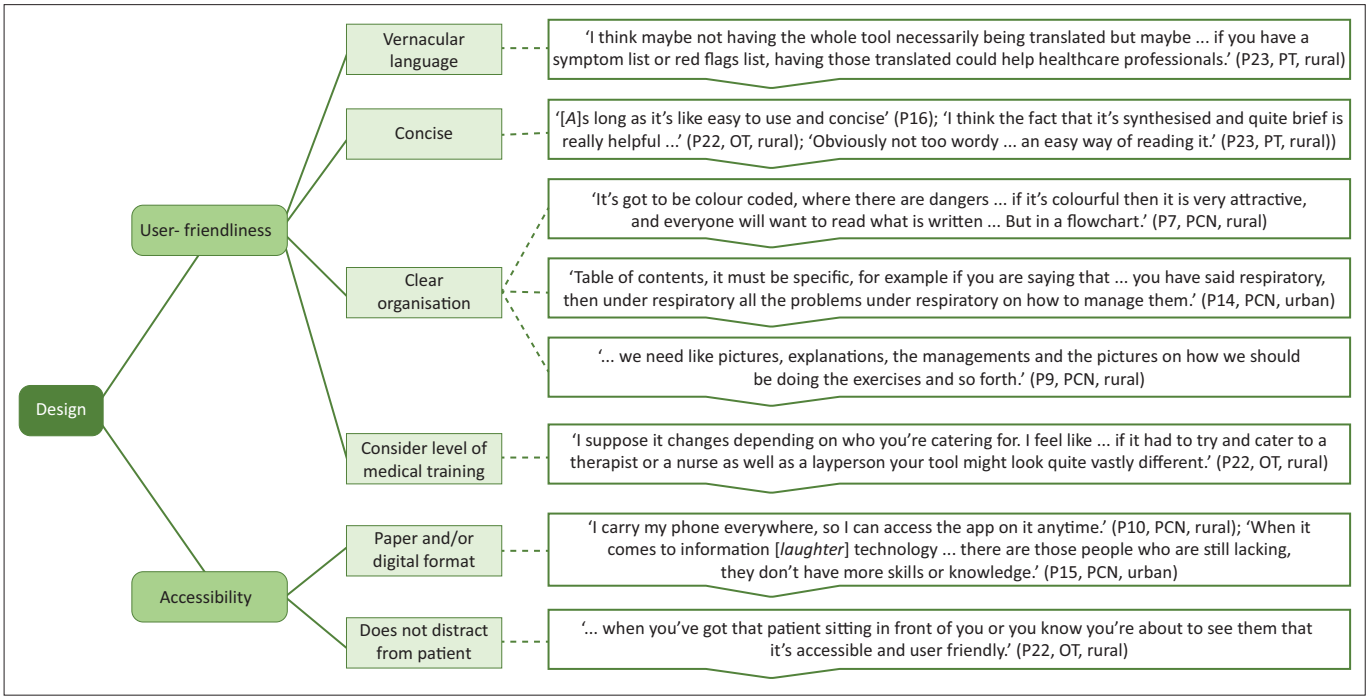

FIGURE 1: Subtheme, categories, sub-categories and exemplary quotes regarding suggestions on the design of the proposed tool.

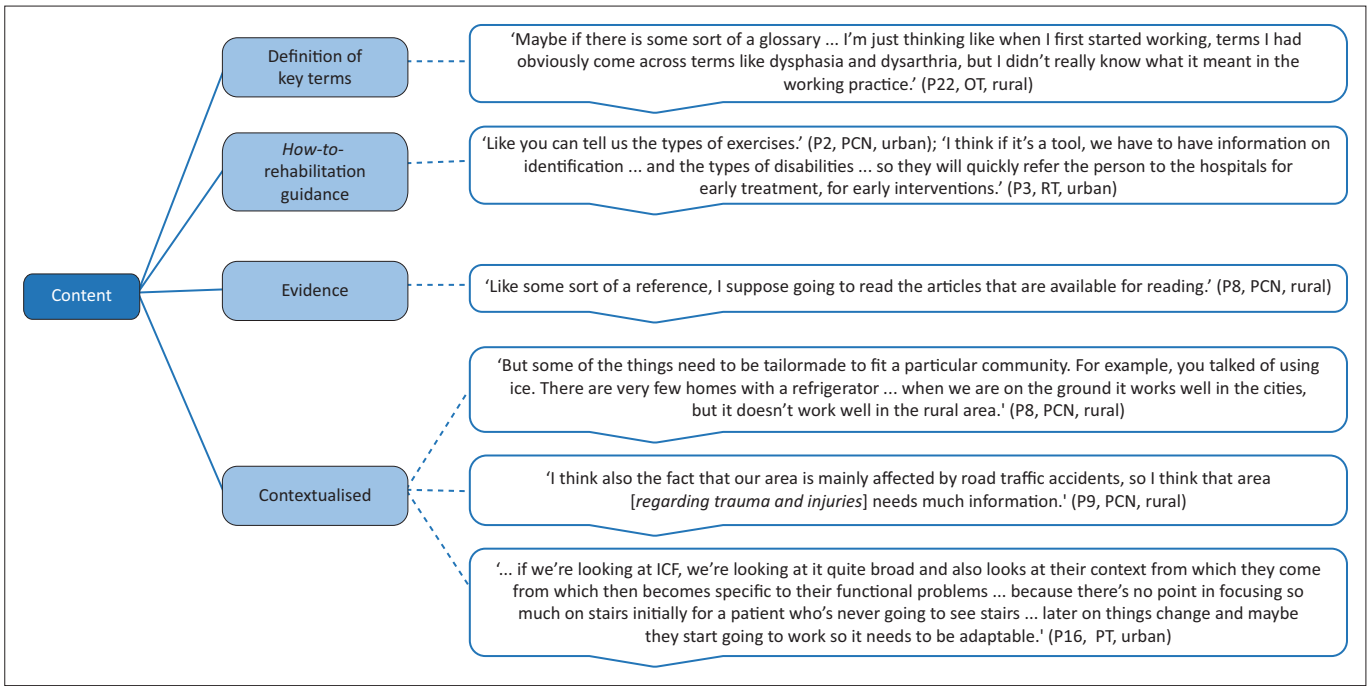

FIGURE 2: Subtheme, categories and exemplary quotes regarding suggestions on the content of the proposed tool.

patients' needs according to their context and stage of rehabilitation progression.

Theme 4: Suggestions on training

Subtheme 4.1: Continuous training and support

Participants highlighted the need for ongoing structured training to sustain the effective use of the RGT. One participant explained:

> 'I think the programme should be a yearly thing, for example each year there should be a person that is identified … so that everyone can be equipped with that skill so that when I'm not here, it does not become my baby.' (P14, PCN, urban)

It seemed that in these contexts there is a high turnover of PCPs, particularly recently graduated community-service (com-serve) therapists who are required to work 1 year in rural or remote settings. One participant highlighted the need for systematic handover processes as follows:

> 'If I'm thinking about the facilities that are com-serve run, making sure that there's handover of that tool year to year, so an outgoing com-serve can say look, this is your tool that you can refer to if you're stuck.' (P22, OT, rural)

Theme 5: Potential users of the rehabilitation guidance tool

Two themes were related to potential users of the proposed tool. PCPs as potential users of the RGT (Subtheme 5.1) and community members as potential users of the RGT (Subtheme 5.2).

Subtheme 5.1: Primary care providers

PCPs as potential users of the RGT and community members as potential users of the RGT.

Subtheme 5.2: Community members

A wide range of stakeholders, in addition to PCPs, were highlighted as potential users of the RGT. These included community leaders, educators and caregivers. Table 3 highlights the suggested stakeholders according to the two themes, the reasons why the stakeholders could benefit from the RGT and exemplary quotes to support the reasons. The most frequently suggested stakeholders were the nurses and CHWs.

Discussion

This study explored the perceptions of PCPs about acceptability, suggested improvements and potential users to consider when developing and implementing the proposed innovative tool to help PCPs identify, refer and provide basic rehabilitation interventions in low-resource settings. Our engagement with key participants at the coal face of primary care services yielded a rich source of usable information to guide the development and implementation of the RGT for use in PHC settings where an inadequate rehabilitation workforce exists.

Acceptability

Most of the PCPs who participated in the study expressed considerable interest and a positive attitude towards integrating the proposed RGT in primary care. Participants cited its potential benefits in promoting collaborative learning and knowledge exchange between rehabilitation professionals in PHC and PCPs. Consistent with previous reports (Magoba 2023; Malik 2023), they recognised the capacity for existing PCPs to be successfully trained in identifying rehabilitation needs and providing basic rehabilitation services with the aid of this RGT. For example, in Uganda and Pakistan, the successful pilot implementation

TABLE 3: Potential users for the proposed tool, reasons provided and exemplary quotes.

Potential users	Reasons	Exemplary quotes
Primary care providers		
Doctors	To improve doctors' awareness of rehabilitation	'I mean if there are doctors who are available, it would benefit for them to know potentially some things about the different professions.' (P23, PT, rural)
Nurses	To help nurses in identifying, referring and treatment planning for patients requiring rehabilitation	'It might be really helpful for our clinic nurses to figure out, should this patient be referred on for rehab and what is an appropriate referral and what treatment course, or management plans should they be following.' (P22, OT, rural)
Assistant nurses	Play a frontline role in the delivery of healthcare therefore streamlining the referral process to ensure timely rehabilitation intervention	'I always suggested that if assistant nurses can be given the idea of what goes in here because they are the ones who take part when people are coming here, your BPs, your temperatures, your HETs before the books come to us for us to attend the actual patient. So, if they can themselves be able to identify such problems then it can be easy to quickly refer a person … I'm thinking that shortage of staff is one problem because it needs more hands, not just one.' (P14, PCN, urban)
Village health workers or community health workers	Are familiar with the patient and community needs because of their frequent interactions Are readily available and have comparatively less workload	'The information should reach the village worker, why because the village worker is the one who is close to the patients, and can I be allowed to say the village health worker has got less work so … it is easy for them to go to the household level and practice with the patient or help the patient with the exercises.' (P2, PCN, urban)
	Already play the role of identifying patients requiring healthcare	'Village health workers help us in identifying our clients in the community because they go door to door.' (P3, RT, urban)
Community members		
Carer to carers	Conduct individual treatment sessions in the home environment of identified patients.	'I think our carer to carers who do home visits to our children with CP independently, this would be so helpful …' (P24, SLT, rural)
Community leaders	Already play the role of disseminating information and garnering acceptance within communities	'If the information first reaches the village head it would be easily accepted in the rural areas so it's good for it to involve village heads, counsellors, headmen.' (P2, PCN, urban) 'Headmen in the villages when they have meetings, they could use the pamphlets and spread the information.' (P20, PCN, rural)
Teachers	To disseminate information to the community	'Also, teachers, they would have lessons at school and teach children about those.' (P10, PCN, rural)

of the World Health Organization's Basic Rehabilitation Package Clinical Resource (BRP-CR) (World Health Organization 2023) was largely attributed to the willingness of rehabilitation professionals and other PCPs including medical doctors, clinical officers and nurses. This resource outlines a limited set of evidence-based, low-cost, high-impact interventions that can be safely administered by PCPs in settings where an inadequate rehabilitation workforce exists (World Health Organization 2023). Similarly, the readiness of both the rehabilitation professionals and non-rehabilitation PCPs in our study settings may be leveraged to facilitate the ongoing collaboration that is required for the successful implementation of the RGT.

Not all PCPs were receptive towards the use of the RGT. Few rehabilitation professionals resisted the use of the RGT in upskilling non-rehabilitation PCPs because of concerns about maintaining professional boundaries. This issue has been debated by healthcare professional regulatory bodies that seek to protect the ethical principles that promote patient safety, patient-centeredness and effectiveness while protecting the healthcare professionals' roles and identities (Byrne, Baldwin & Harvey 2020). On the other hand, studies have demonstrated how silos within the rehabilitation professions in particular (Guerra et al. 2022) and healthcare professionals in general (Alves & Meneses 2018) promote poor communication, conflicts and redundancy resulting in fragmented and uncoordinated care for patients. Notwithstanding, the non-rehabilitation PCPs from the study who also lacked support for the use of the RGT realised the limitations of the RGT in still requiring the expertise of skilled rehabilitation professionals despite the usefulness of this innovative tool. The rehabilitation workforce comprises the skilled experts in the delivery of rehabilitation services that address the full range of needs within the population (Mills et al. 2021). Moreover, it does not replace the need for adequately trained rehabilitation professionals in PHC. However, in the absence of an inadequate rehabilitation workforce, there may be a need to consider innovations that can enable the available workforce to provide basic limited interventions with the necessary training. Thus, in low-resource settings, it may be useful to strengthen public health systems and navigate professional boundaries to provide integrated primary care (Druetz 2018). The authors recommend that healthcare professional regulatory bodies update frameworks to support the safe integration of innovative strategies such as the RGT to ensure that task shifting is carried out ethically without compromising patient quality. Furthermore, clear guidelines that delineate the roles of rehabilitation professionals and non-rehabilitation professionals may need to be established to maintain professional boundaries.

Suggested features

We found that the proposed features to enhance the RGT's user-friendliness and accessibility were closely connected to the context in which the RGT was to be used. For example, the request for language translations may reflect the challenges that exist in providing healthcare because of language barriers, which have been reported by previous studies conducted in these settings (Kamvura et al. 2022; Ned, Cloete & Mji 2017). In South Africa, for instance, community-service therapists are often deployed to rural remote areas where they are often unable to speak the local vernacular languages (Ned et al. 2017). The urban

communities face challenges because of the large populations of both foreign immigrants (Mukumbang, Ambe & Adebiyi 2020) and local economic immigrants (Charumbira et al. 2024). Additionally, most languages spoken in the current study's contexts have numerous dialects (Van de Velde et al. 2019). Therefore, incorporating language translation, colour, illustrations and simplified language can improve the RGT's usability and accessibility. In this study, PCPs also emphasised the importance of brevity, organisation and easy access to the information. This request may be attributed to the heavy workloads experienced by the PCPs in these contexts and thus consideration needs to be made to ensure that the PCPs make effective use of the brief consultation periods. Applying these suggestions can guide the design and development of a contextually relevant tool, potentially improving its acceptance and utilisation in such settings.

Suggested content

A key finding from this study was the need for guidelines that provide *how-to* guidance that can be applied to real-world clinical-case scenarios when identifying, referring and managing patients with rehabilitation needs. This information is often not found in most grade-type evidence and sentinel clinical practice guidelines. For example, the South African Contextualised Stroke Rehabilitation Guideline (SA-CSRG) provides strong recommendations for muscle strengthening as follows:

> Stroke survivors with reduced strength in their arms or legs should be offered progressive resistance training. (South African Contextualised Stroke Rehabilitation Guideline [SACSRG 2019:75])

The PCPs will not be able to decide the type of exercise, the frequency and dosage or patient positioning in the absence of rehabilitation professionals (Jones et al. 2021). Additionally, while the South African Standard Treatment Guidelines make brief recommendations for referral to rehabilitation, they do not detail any basic rehabilitation interventions that may be offered by the PCPs (Conradie et al. 2022). This is especially important in these low-resource contexts where patients may not be able to access rehabilitation services at the primary care level or where available at higher or private healthcare institutions (Conradie et al. 2022). Thus, even though rehabilitation is patient-centred, there may be a level of standardisation of rehabilitation care provided to primary care patients.

In this study, contextualisation of the content was deemed crucial to the successful implementation of the RGT. Participants mentioned the importance of considering the priority needs of the settings, the non-availability of resources in most healthcare settings as well as the significant shortages experienced by poorer populations, the language barriers and cultural sensitivity. These factors were among those identified by Watkins et al. (2023) when considering challenges experienced by health professionals in applying evidence-based practice in rehabilitation in low- and middle-incomes (LMICs) (Watkins et al. 2023). The authors previous study in these settings revealed the diverse health beliefs, social determinants of health and healthcare system challenges which affected the patients' health-seeking behaviour and access to healthcare and the PCPs' provision of healthcare (Charumbira et al. 2024). This confirms the current study's contextual factors to consider in the development and implementation of the RGT. Although the PCPs provided some input towards the rehabilitation-based content of the application, further consultation with experts within the rehabilitation field may be required to validate and build on the current information in the RGT. Additionally, further research is required on contextual factors affecting the effectiveness of rehabilitation interventions in low-resource settings.

Suggested training

Another significant finding from this study was the necessity for ongoing training of RGT users and supervision by rehabilitation professionals to improve the sustainability and effectiveness of the RGT. Previous studies have highlighted that one-time training sessions are insufficient in promoting the adoption of guidance tools (Pokhrel et al. 2021). Sustained mentoring may be difficult in these settings because of the inadequate numbers of rehabilitation professionals in PHC. However, telerehabilitation approaches may be used by the available district-level rehabilitation professionals to effectively oversee and support the continuous implementation of the RGT (Joshi 2019). In low-resource contexts, several barriers to telerehabilitation will need to be considered, including poor connectivity, lack of resources, knowledge and technical skills (Charumbira et al. 2022a). As suggested in this study, 'training of trainer' programmes (where skilled rehabilitation professionals impart relevant skills to local champions including PCPs, carers and patients who in turn cascade these skills to others) are strong predictors of sustainability. Furthermore, such programmes have the potential to rapidly and exponentially upskill PCPs at a low cost (Mormina & Pinder 2018). Thus, the RGT can remain a cost-effective innovation that will continue to facilitate access to rehabilitation for underserved populations.

Potential users of the rehabilitation guidance tool

This study has identified variable potential users for the proposed RGT which extended beyond the initially planned stakeholders of PCPs and patients. Involving the community, including community leaders and teachers, further enhances the development of the RGT to meet the needs of the different stakeholders. Previous studies have supported the use of influential people in communities to garner support, raise awareness and ensure the sustainability of community-based rehabilitation interventions (Batterham et al. 2016; Blose et al. 2021). However, because the most frequently suggested end-users were the PCNs and CHWs may signify that these cadres should be the initial focus of the RGT. Previous studies have highlighted the significant roles played by PCPs in supporting

rehabilitation, including patient identification and referral. (Gilmore et al. 2017). Notwithstanding, the literature has highlighted potential barriers to training laypersons for medical roles, including safety risks, legal and regulatory restrictions on the scope of practice, and discrimination from the community or healthcare professionals (Glenton et al. 2013). Consequently, while the RGT may have a range of potential users, its implementation must be tailored to the specific knowledge and skills of each user.

The findings further underscore the importance of involving end-users in the planning and design of interventions for strengthening rehabilitation in PHC systems. This information will be communicated to application developers and incorporated into the development of the RGT tailored for use by PCPs in low-resource settings. We recommend continuous engagement with the PCPs throughout the development and implementation process to ensure that the tool addresses the populations' needs and integrates seamlessly into the patient care pathways.

Strengths and limitations of the study

This is the first study that has explored PCPs' perspectives on acceptability, suggested enhancements and potential users of an innovative RGT. The study findings will be useful in informing the development and implementation of an innovative tool that will enhance the accessibility, coverage and quality of rehabilitation services in PHC. Involving the PCPs in the development process of the RGT can increase the sense of ownership and acceptance of the tool, potentially leading to better implementation.

The study captured the context in which the RGT will initially be used, providing a contextual understanding of the specific challenges and needs in the study settings. However, transferring the study findings to different contexts may be limited as the study was conducted in a few selected PHC facilities from two districts in South Africa and in Zimbabwe. The situation may have been different in other districts or provinces.

The methodology involving individual semi-structured interviews was selected because it was not possible to consult with several PCPs at the same time. This is because of there being very few PCPs available and their time constraints. However, by interviewing a variety of PCPs, the study incorporated diverse viewpoints ensuring that the tool is applicable across different primary care contexts and primary healthcare professions. The better methodology could involve the complex process of participatory action research which facilitates better service-user involvement in various domains of a healthcare system (Abayneh et al. 2022). Further research includes exploring the perspectives of the patients as the primary end-users of the RGT.

Conclusion

The PCPs in South Africa and Zimbabwe that participated in the study were mostly positive towards the use of the RGT; therefore, this tool provides a potentially viable strategy for building the rehabilitation capacity of PCPs including unsupported community-service therapists in these low-resource settings. However, this tool does not replace the need for an adequate rehabilitation workforce in PHC. The key suggested features provided by the PCPs in ensuring that it is user-friendly and accessible are instrumental in informing the design of the tool. Its successful implementation will require a multifaceted approach that addresses training, supervision, collaboration with rehabilitation experts and local stakeholders, and the use of innovative approaches such as telerehabilitation and community involvement. The initial phase in the development of the RGT will target the PCPs.

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

M.Y.C. and Q.A.L. contributed to the design and implementation of the research, to the analysis of the results and to the writing of the article.

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Data availability

The data that support the findings of this study are openly available in the SUNScholarData repository at https://doi.org/10.25413/sun.23545428.

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