

# Lessons learned from an occupational therapy programme needs assessment



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**Background:** A needs assessment identifies the differences between actual and ideal situations to facilitate the development of a new programme or improve existing services.

**Objectives:** This article shares our experiences conducting the needs assessment in a context where people had limited or no understanding of the need being assessed.

**Method:** Adhering to a three-phase model – comprising pre-assessment, assessment, and post-assessment – we employed diverse data collection methods, including quantitative survey, qualitative interviews, and environmental scan.

**Results:** The findings underscored the necessity of expanding rehabilitation services in Ethiopia, with a shift from a purely medical focus to addressing issues associated with daily functioning and community engagement. These issues align closely with the core expertise and responsibilities of occupational therapists. Participants expressed support for the introduction of occupational therapy in Ethiopia and willingness to incorporate the practice of occupational therapists in their settings. The challenges encountered were how to ask about occupational therapy when it is not well known by members of the local population and how to introduce the profession without biasing participants' responses.

**Conclusion:** Conducting a needs assessment was critical to developing occupational therapy services in Ethiopia. We welcome others to learn from our experiences.

**Contribution:** This manuscript details the assessment process and delves into the challenges we encountered and lessons learned. It extends methodological suggestions to inform future evaluations and contributes valuable insights to the broader discourse on needs assessment and programme development in a context where people have limited awareness of services, such as occupational therapy.

**Keywords:** disability; needs assessment; rehabilitation; occupational therapy; programme development.

## Introduction and rationale

The World Health Organization (WHO) estimated that nearly 16% or 1.3 billion of the global population experience some form of disability, and a majority of them live in low- and middle-income countries (LMICs) (World Health Organization 2011, 2023). This number is expected to rise as a result of the increase in the prevalence of non-communicable diseases (NCDs) and the growing ageing population in LMICs (Boutayeb & Boutayeb 2005; Msyamboza et al. 2011; World Health Organization n.d.). Though the rights of persons with disabilities have been enshrined in the Convention on the Rights of Persons with Disabilities (CRPD) (United Nations 2006), these individuals, regardless of their country of origin, experience numerous barriers in different aspects of their lives, such as accessing health, education, and employment services (Gibson & Mykitiuk 2012; Gréaux et al. 2023; McKinney & Swartz 2021). The situation is worse in LMICs, where misconceptions about disability are high, leaving persons with disabilities in a vulnerable situation (Hashemi et al. 2022; Jones, Muz & Yadete 2021). The inaccessible built environment and limited formal support also hinder persons with disabilities from reaching their full potential (Bhuiya, Hasan & Jones 2022; Krupa et al. 2022).

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**Note:** †, Nebiyi Mesfin 1982 – 2023.

## Ethiopia and socioeconomic status

Ethiopia is the second most populous country in Africa (about 123m people as of 2022) and one of the fastest growing economies in the region. The growth was estimated at 6.4% in the fiscal year of 2021–2022 (The World Bank n.d.). More than 80% of its population live in rural areas and primarily depend on agriculture for livelihood (Food and Agriculture Organization of the United Nations n.d.). The country experiences high poverty rates, particularly in rural areas where a majority of households subsist on less than \$0.50 per day (Food and Agriculture Organization of the United Nations n.d.). Land degradation, rough terrain, drought and armed conflict are major social, economic and environmental threats in Ethiopia (Assefa & Hans-Rudolf 2016; Gebreyohannes et al. 2013; Gesesew et al. 2021; Yigezu Wendimu 2021). The country's health service encompasses public, private and a limited number of non-governmental healthcare sectors. The public healthcare sector is structured as a three-tier system, comprising primary, secondary, and tertiary level health care (Wuneh et al. 2019). Rural residents mostly rely on the public sector for needed healthcare services. However, the Health Extension Programme in Ethiopia, an innovative community-based health programme, has improved essential health service coverage in underserved communities and rural areas (Misganaw et al. 2022). In the past decades, the country has made significant improvements in reducing maternal mortality rate, malaria-related deaths, and human immunodeficiency virus (HIV) infection (Assefa et al. 2017).

## Ethiopia, disability and rehabilitation services

It is difficult to find the actual number of people with disabilities living in Ethiopia because of the lack of a comprehensive nationwide survey. Only a few published studies have focussed on the prevalence of disability in Ethiopia. A 2006 study that was conducted in North Ethiopia identified that 932 of the 24453 surveyed individuals reported having a disability, giving an overall 3.8% crude disability rate for the study area (Fitaw & Boersma 2006). A 2017 study conducted in northwest Ethiopia at the Dabat Health and Demographic Surveillance System site showed the prevalence of disability to be 1.82% (1228 of 67395 people) (Chala et al. 2017). In addition to the challenges outlined above, many people with disabilities residing in Ethiopia experience some unique barriers in their daily lives because of rough terrains, such as water, mountains, and lowlands, contributing to their marginalisation and exclusion (Gaiha, Mathur & Kulkarni 2022; Krupa et al. 2022). These challenges, coupled with a significant shortage of disability-related services, further complicate the lives of people with disabilities (Tilahun et al. 2019). Additionally, disparities exist among disability subgroups with respect to access to resources and supports. (Jones et al. 2021). For instance, findings from a study in Ethiopia illustrate that adolescents with hearing impairments receive a lower financial stipend than those with visual impairments, while those with physical impairments receive no stipend (Jones et al. 2021).

Rehabilitation services are essential for people living with disabilities and those at risk of disability to facilitate their optimal functioning and community participation (Cieza et al. 2020; World Health Organization 2013). A recent study on the need for rehabilitation services estimates that one in three people who experience a severe illness or injury worldwide require rehabilitation services (Cieza et al. 2020). Yet, evidence suggests that LMICs, particularly in African countries, have limited availability of skilled rehabilitation health personnel. For instance, an investigation revealed that more than half of African countries do not have occupational therapy or physiotherapy education programmes (Agho & John 2017). Responding to this gap, a partnership among the University of Gondar in Ethiopia, and Queen's University and the Mastercard Foundation Scholars Program in Canada planned to establish an undergraduate occupational therapy programme at the University of Gondar. The University of Gondar is well-positioned to educate qualified occupational therapy personnel because of its reputation in health sciences research and education for more than 60 years. The goal of establishing an occupational therapy undergraduate programme at the University of Gondar is to bring a much-needed and substantial change to the quality of care for people with disabilities. However, it was imperative to understand how the introduction of the occupational therapy profession could contribute to meeting the needs of people living with disabilities in Ethiopia, and how an undergraduate curriculum might best speak to actual health professional needs in the community. To that end, we conducted an occupational therapy needs assessment in Ethiopia. The objectives of the occupational therapy needs assessment were twofold: (1) to understand the activity and participation context for people with disabilities and people vulnerable to disabilities in Ethiopia; and (2) to understand how occupational therapy as a profession might support unmet service needs related to disability in Ethiopia. The primary goal of the needs assessment was to produce a comprehensive analysis of the need for the occupational therapy programme as required by the University of Gondar. Additionally, the curriculum development team of the occupational therapy programme was seeking rich documentation of the Ethiopian healthcare context and population needs to inform the content, structure and key focus areas of the emerging occupational therapy curriculum. With its focus on enabling individuals to engage fully in the daily activities they need, want or have to do, a core principle for advancing the profession internationally has been to 'Think globally, act locally' (Kronenberg, Algado & Pollard 2005). Our needs assessment was also supported by evidence of a high level of disability in Ethiopia (World Health Organization 2011). The needs assessment was further reinforced by the country's commitment to persons with disabilities, as demonstrated by the Ethiopian government signing and ratifying the CRPD (United Nations 2006). This Convention aims to 'promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity' (United Nations 2006).

This article aims to share our experiences conducting a needs assessment for an occupational therapy programme in Ethiopia – a context where people had limited or no understanding of occupational therapy. The article also attempts to provide some possible solutions for evaluators who would like to conduct a similar needs assessment. The sections that follow provide: (1) practical and theoretical background to the needs assessment, (2) methods used, and (3) results, including challenges encountered throughout the process. The article concludes with reflections on potential mitigating strategies.

## Occupational therapy

Occupational therapy is an internationally recognised, evidence-based profession with foundational knowledge and skills related to disability, inclusion, and community living. The profession aims to enable people with disabilities or at risk of disability to participate in everyday life activities to promote their health and well-being (World Federation of Occupational Therapy 2012). Additionally, occupational therapy professionals are skilled in transition planning, conducting activity analysis to match important task demands and environmental supports with an individual's strengths and capacities, and supporting the fulfilment of educational, vocational and social roles (World Federation of Occupational Therapy 2012). These skills are integral to enabling people with disabilities to achieve and maintain their optimum function and participation in community roles, and in reducing the impact on families and communities (Anaby et al. 2018).

## Needs assessment and theoretical framework

A needs assessment is a systematic process to identify gaps between existing (*what is*) and ideal situations (*what should be*) (Altschuld & Witkin 1999). It also involves the judgement to prioritise the needs identified and how they could be met (Altschuld & Watkins 2014). Therefore, the findings of a needs assessment facilitate the development of new programmes or the improvement of existing systems to meet the needs (Hung & Altschuld 2013). Our focus was to understand what needs or gaps occupational therapy could address in Ethiopia. More specifically, we were interested in how the profession could add value to the existing health and social service systems. We obtained the perspectives of a wide range of stakeholders, including persons with disabilities, their family members, rehabilitation and other health and social service professionals, and relevant government and non-government organisations.

We adopted the World Health Organization's International Classification of Functioning, Disability and Health (ICF) as a framework to guide the needs assessment (World Health Organization 2001). An environmental scan of existing healthcare services suggested that clinical and rehabilitation services related to disability largely focussed on impairments and were offered in clinical settings. With this in mind, we specifically focussed on the concept of 'activity and

participation' as described in the ICF framework to inform the survey questionnaire and interview guide for the needs assessment. Activity and participation in the ICF focus on the execution of tasks and activities and involvement in life situations in the actual context in which people live. Given this, the section below provides an overview of methods used to conduct the occupational therapy needs assessment.

## Research methods and design

### Needs assessment design

The assessment was undertaken by an international team of Ethiopian and Canadian academics, and the Mastercard Foundation Scholars Program staff who had expertise in occupational therapy, higher education in Ethiopia, educational scholarship, programme management and programme evaluation. The team met regularly over 6 months to design and operationalise the assessment.

The needs assessment design activities followed the three-phase model first described by Witkin and Altschuld (1995). This included: (I) Pre-assessment, (II) Assessment, and (III) Post-assessment. In the Pre-assessment Phase (Phase I), the goal was to focus the needs assessment by considering any existing data, determining the focus and reach of the assessment, and gaining stakeholder commitment for the stages that followed. The Pre-assessment Phase involved a wide range of activities: (1) an environmental scan of existing information on injury and disability in Ethiopia; (2) determining a sampling strategy that considered all relevant stakeholder groups; (3) preparing interview guides and survey instruments; (4) iterative review of all instruments by the entire team to ensure relevance to the goals, and sensitivity to local issues; (5) review of instruments by local experts; (6) translation of all instruments; (7) training of data collectors; (8) instrument pilot testing; and (9) ethical review of study protocol at both University of Gondar and Queen's University.

The Assessment Phase (Phase II) included the data gathering and assessment, which was conducted to clearly articulate the difference between the 'what is' situation and the desired or optimal state. Needs were prioritised in this phase, and potential solutions were identified. We used a cross-sectional descriptive study design for the assessment, with participants recruited using a convenience sampling strategy.

We recruited participants for the study through 34 health-related service sites, from a range of areas in Ethiopia including Addis Ababa, Assella, Bahir Dar, Burayu (Oromia), Dessie, Dire Dawa, Gefersa, Gondar, Jimma and Mekele. To recruit respondents for the surveys, at sampling sites, the data collector approached a person in an authoritative position (i.e., department head, unit leader, senior health care professional) to ask who they could approach to complete the survey. The data collector then approached those who were present and available to ask if they were interested. Those who were interested participated. A formal invitation letter explaining the aim and objectives of the study was sent to

each stakeholder days before data collection. Data collection was done by the in-person delivery of the survey and related information to each stakeholder's office. These materials included ethical clearance, the consent form, a letter of information, a questionnaire and pamphlets and/or brochures related to occupational therapy. The questionnaire was collected on average on the third day, but some of the participants returned the document after a week. Using these processes, we collected completed quantitative surveys from 28 health service providers (survey 1) and 22 individuals working in non-clinical roles (i.e. directors, administrators, team leaders and advisors) (survey 2).

We also conducted qualitative interviews with 44 participants (Creswell 2014). Participants were the health service providers (e.g. physiotherapists and physicians) and non-clinical service providers (e.g. social workers, community-based rehabilitation workers), educational instructors, ( $n = 19$ ) people with disabilities, and family members of people with disabilities ( $n = 25$ ) deemed to have information to share about living with a disability and disability-related supports and services in Ethiopia. In determining the number of interviews that would be needed, we strived for a diversity of disability experiences to be represented, including physical, sensory, psychosocial, and intellectual. We followed the following strategies to recruit participants for qualitative interviews:

- Health care provider participants were accessed through directors of selected hospitals. Convenience sampling was used to recruit participants from a list provided by directors.
- Individuals with a disability and their families who were identified by directors of selected hospitals through service logbooks as receiving services were all sent an invitation letter.
- Mastercard Foundation scholars: The Mastercard Foundation Scholars team provided a list of scholars who were all invited to participate.
- University instructors: We purposefully selected university instructors involved in teaching and mentoring the Mastercard Foundation scholars to participate in the study.

Qualitative interview participants came from the following areas: Addis Ababa, Gondar, Sendia, Bahirdar, West Harrerge, Jimma and Debre Markos Town. Prior to conducting interviews, we provided them with the ethical clearance, the consent form, a letter of information, and a pamphlet and/or brochure related to occupational therapy. All interviews were audio-recorded, transcribed and translated into English before analysis.

The interviews were semi-structured with prompts to encourage participants to elaborate and provide examples. Interviewers were provided with training that consisted of a 2-day workshop focussed on honing their ability to collect data specific to the needs assessment. The interviewers conducted interviews in English for health professionals and

University of Gondar faculty members and in Amharic for persons with disabilities and their families.

We used descriptive statistics (e.g. frequencies, mean and standard deviation) to analyse quantitative data. Since the sample size was relatively small, correlational or subgroup analysis was not possible. Qualitative data were uploaded to Lumivero (2017) NVivo (Version 12). [www.lumivero.com](http://www.lumivero.com) and analysed using a generic qualitative approach in order to arrive at central themes and summarise findings (Braun & Clarke 2006). Four Canadian researchers with expertise in qualitative methods of inquiry were involved in data analysis. Each researcher independently conducted an initial review of two interviews (one health care provider, one person living with disability), took notes and recorded impressions concerning emerging overriding themes. The team then met to discuss and reach a consensus on an initial coding structure based on a review of these two transcripts. Pairs of analysts then did line-by-line coding with two interviews, each using the provisional thematic coding structure. Each interview was coded by the analysts independently, and the resulting codes were then compared within each pair to determine agreement and/or disagreement. The full group then met to discuss emerging findings and to revise the thematic coding structure. Additional codes were created during this process, and some codes were combined. Individual analysts were then assigned two interviews each for coding. The team then performed a reverse audit on the content of each code to determine whether the coding seemed to be: (1) consistent and (2) had internal coherence. The remaining interviews were assigned to individual analysts and coded. The team developed the key messages within each theme, and extracted key findings of relevance to occupational therapy curricular development. Finally, the results of the analysis were reviewed with Ethiopian team members to clarify meanings and provide context to the findings.

Findings from all data sources (i.e., environmental scan, qualitative interviews and quantitative data) were detailed in a final report. Findings across data were integrated to identify common needs and elaborate on how they were experienced across sectors. For example, qualitative interviews with persons with lived experience and their families demonstrated needs related to assistance with employment and other forms of productivity, while quantitative surveys identified low knowledge and expertise in interventions related to employment and productivity.

The Post-assessment Phase (Phase III) involved decision-making, evaluating possible ways forward, proposing an action plan, and disseminating results. The curriculum development team used the results of the needs assessment to tailor the curriculum content to be sensitive to needs in the local context while meeting international education standards outlined by the World Federation of Occupational Therapists. The needs assessment findings informed the content development of the occupational therapy programme curriculum. Specifically, it helped the curriculum development team to ensure the use of

cases that represent prevailing concerns in health access and delivery. Further, the curriculum development team ensured that the included cases represented the lived experience of people with disabilities. The needs assessment was used to prepare content that would educate students on locally relevant political and advocacy issues, and structure field experiences relative to existing healthcare delivery structures both within formal institutions and within the broader community. We also shared summaries of the needs assessment information during two virtual curriculum development workshops in August and November 2020, where we obtained feedback on the Bachelor of Science in Occupational Therapy (BScOT) curriculum draft from various international stakeholders. The needs assessment was also eventually used to prepare a workforce prioritisation report presented to various government ministries (e.g. Ministry of Health, Civil Service Commission), to inform national deployment of occupational therapy graduates from the newly-established programme.

## Results and discussion

### Quantitative findings

Among 28 service providers (survey 1), a majority of them (71.4%) worked in a hospital setting and mostly with children and youth (75% – 85.7%). The top three health issues most frequently seen were musculoskeletal problems ( $n = 19$ ), neurological problems ( $n = 16$ ), and mental health conditions ( $n = 12$ ), developmental ( $n = 12$ ), and cognition ( $n = 12$ ). Nearly 30% of service providers who work directly with clients reported that they do not have any disability-related training, whereas 25% had some kind of in-service training. Most stakeholders did not know of any occupational therapists working in Ethiopia. Furthermore, 64% of the respondents did not believe that people with disabilities are offered rehabilitation services in all settings where they engage in daily activities such as homes, schools, places of work, community, among others. All service providers said they would support the profession of occupational therapy. Most would support by employing new graduates (78.6%), some would collaborate with new graduates (71.4%), others would recommend the employment of new graduates in other organisations (60.7%), and 32.1% would provide mentorship to new graduates.

The 22 stakeholders who participated in the survey reported that their organisation focussed their work on the following age groups: adults (95.5%), older adults (54.5%), young adults (59.1%), school-aged children (50%), and infants and pre-school-aged children (40.9%). Disability-related training was limited, with 9 of the 22 participants (40.1%). Those who reported some training most frequently reported receiving their training through in-services ( $n = 6$ ), workshops ( $n = 5$ ), and/or certificate training ( $n = 3$ ). One person reported having a related bachelor's degree, and one person had a medical degree. Participants generally reported a low level of knowledge in the areas of disability. When asked to reflect on current health and rehabilitation services in Ethiopia, it was evident that most stakeholders were not satisfied with the

system's current capacity to allow clients to optimally participate in daily activities and be involved in their communities. When asked if the Ethiopian healthcare system (currently) meets the needs of persons living with disabilities, respondents rated this item a mean score of 1.23 standard deviation (SD) 1.02 on a 1 to 5 scale (5 = strongly agree). Respondents generally agreed that their institutions would benefit from the addition of professionals who could provide a holistic approach to rehabilitation. Out of 22 respondents, 20 supported the establishment of the occupational therapy profession in Ethiopia. A majority of these stakeholders indicated that their support would include hiring graduates ( $n = 13$ ) and advocating for or providing funding for individuals to access occupational therapy services once established ( $n = 13$ ). The other two respondents felt unable to comment because their lack of understanding of the role of an occupational therapist compromised their ability to comment on whether the establishment of a new educational profession in the country is necessary.

### Qualitative findings

Participants identified that the rehabilitation services provided or received were largely focussed on reducing impairments while services directed to daily living activities and community participation were limited. Services rarely extend into the community and thus service providers have limited opportunity to see how the people they serve fare. The community life of people with disabilities was characterised as difficult, marginalised, and vulnerable to idleness and poverty, and families were described as carrying a burden as primary carers and supporters. Factors contributing to these experiences include a lack of awareness and negative attitudes towards disability, inattention to disability in the design and implementation of community buildings resources and opportunities, the scarcity of disability-related resources, and the rough terrain of Ethiopia. A detailed description of qualitative findings from interviews with persons with disability and their families is reported elsewhere (Krupa et al. 2022).

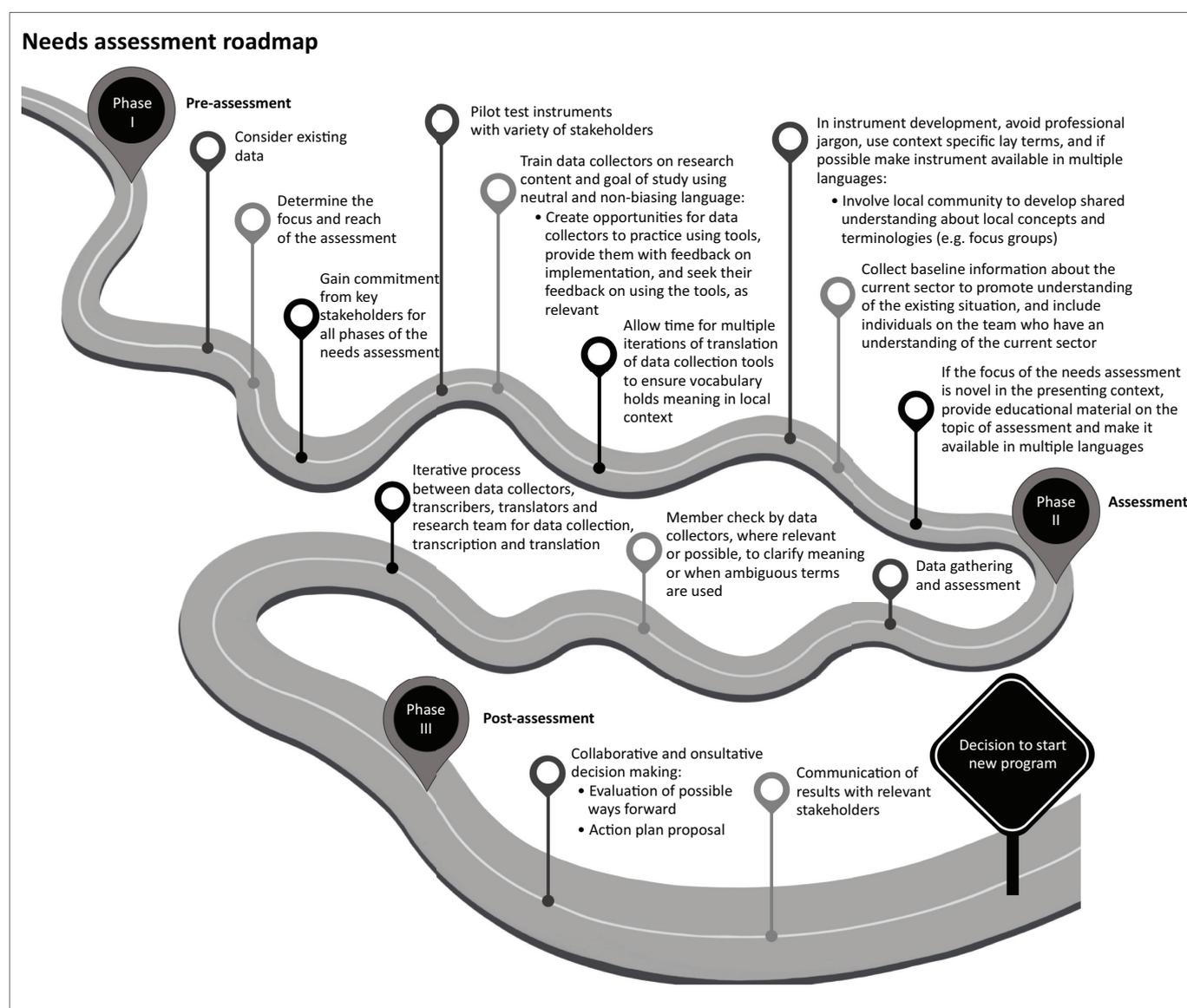
Participants described the potential role of occupational therapy as contributing to the functioning and emotional well-being of individuals with disability in enabling their success with everyday tasks and their community participation in important social roles, such as work. Occupational therapy was also described as having the potential to contribute to disability prevention (Krupa et al. 2022). Both quantitative and qualitative findings provided good evidence for the requirement to expand rehabilitation services in Ethiopia to include a broader range of rehabilitation professions, particularly in relation to the need to address issues related to functioning in daily activities and community participation in important social roles and activities. These issues are a central focus of occupational therapists' knowledge base and work. The needs assessment suggested that a range of stakeholders support introducing occupational therapy in the country and would be willing to support the practice of occupational therapists in their practice settings.

## Challenges and lessons learned in conducting a needs assessment

Figure 1 provides a roadmap of actions that we would recommend others consider when implementing needs assessments across cultures and when the full range of possibilities is potentially unknown to the general population. The roadmap includes key mitigating strategies we used and key actions for the future that we should have used. We only included key actions that we thought would be useful to a broader audience in various settings. As the roadmap shows, we completed the assessment in three phases. Allowing enough time for Phase I (Pre-assessment) was fundamental to the success of the study. During this phase, we realised how hard it is to speak with people about occupational therapy because they essentially had no concept or image or representation of this profession in their daily lives. Those familiar with the profession typically had an image drawn

from Global North that was not readily applicable or transferrable to the local context. Further, the health system, including rehabilitation in Ethiopia, is strongly oriented to the biomedical model (Krupa et al. 2022). Stakeholders with lived experience, for example, would expect discussion of health and disability to focus on medical conditions and impairments rather than the potential to function in daily activities and participation in community roles and events. This is likely to be a problem any time a new health profession is introduced to a region where it has not previously existed.

Additionally, there were some challenges within the existing health system and/or structure related to competition for limited resources and status within the health system. To overcome these challenges, we embraced a range of strategies to adequately educate the participants on what occupational therapy can do while trying to avoid biasing respondents. Table 1 summarises the primary mitigating strategies used as



Source: Witkin, B.R. & Altschuld, J.W., 1995, *Planning and conducting needs assessments: A practical guide*, Sage, Newbury Park, CA

Note: The points in Phase I road are in no specific order and can be completed at any time. Phases should unfold in an iterative and flexible manner that allows for changes in timelines and process. Coordination may be best undertaken with 1-2 persons dedicated to project oversight. Processes that cross institutional or cultural contexts should include leadership from each context.

**FIGURE 1:** Health profession needs assessment roadmap.

**TABLE 1:** Issues, mitigating strategies, and future suggestions.

Issue and concern	Mitigating strategies used	Suggestions for the future
Use of terms that are well understood by occupational therapists but might not have exact meaning for those out of the profession.	<ul style="list-style-type: none"> <li>Used technical, locally relevant language in all surveys and interview guides.</li> <li>Replaced terms 'occupation', 'occupational performance', 'client-centred' and 'leisure' with more familiar terms like 'activity', 'activity challenge', 'daily routine' 'specific to the patient', and 'free time'.</li> <li>Provided definitions of occupational therapy-related terms that were going to be asked about in the needs assessment (e.g., disability, activities etc.).</li> </ul>	<ul style="list-style-type: none"> <li>Ensure pilot testing of needs assessment materials by a variety of individuals in the profession, adjusting terms to meet general population level of understanding, based on pilot test suggestions.</li> <li>Provide continued formal training and mentoring of data collectors with a collaborative effort between trainers and trainees to improve the tool.</li> </ul>
Challenges with the translation of ideas from English to Amharic, when surveys were initially developed in English to promote international collaboration.	<ul style="list-style-type: none"> <li>Included both English and Amharic translation on the final data collection documents should participants want or need to review a term in the desired language.</li> <li>Recruited support from the [name deleted] staff at the [name deleted] with the translation of the surveys and interview protocols.</li> <li>Pilot tested the quantitative survey questionnaire to explore if the wording of the questions fit with what was intended, and was clear and understandable. Based on the feedback from the pilot test, we revisited and refined the Amharic translation.</li> </ul>	<ul style="list-style-type: none"> <li>Budget significant time in project timelines for translation and verification of adequacy of translations if working across different languages or important terms from other languages and cultures.</li> <li>Conduct focus groups or workshops to define pertinent terms in local language that will be used in data collection. This can be done before drafting surveys and interview protocols. This can facilitate the development of a shared understanding of terms across stakeholders.</li> </ul>
Challenges with the translation of ideas from Amharic to English as expressed by interview participants.	Recruited native Amharic speakers to translate interview transcripts from Amharic to English.	<ul style="list-style-type: none"> <li>Develop shared understanding among stakeholders about concepts and terminologies around the needs assessment topic.</li> <li>Member check by interviewers to clarify meaning when ambiguous terms are used.</li> </ul>
Challenges with obtaining a holistic understanding of current rehabilitation professions and the services they provide by comparing to the occupational therapy profession.	<ul style="list-style-type: none"> <li>Used probes that provided a holistic understanding of concepts relevant to occupational therapy.</li> <li>Designed survey and interview questions to address quintessential concepts, aspects and holistic nature of the profession.</li> <li>Asked if the rehabilitation field used multidisciplinary knowledge and perspectives and if current rehabilitation professions provide services on self-care, self-advocacy, productivity and activities in free time.</li> <li>Explored knowledge, skills and attitudes central to most occupational therapy work internationally.</li> <li>Reached out to officials in government and education to explore the current rehabilitation workforce.</li> <li>Reached out to government to understand most pressing issues related to disability burden currently not being adequately addressed.</li> <li>Distributed informational occupational therapy brochures to participants to provide context and develop shared meaning about the profession.</li> </ul>	<ul style="list-style-type: none"> <li>Utilise diverse avenues for understanding the context and craft probing questions to deepen contextual knowledge.</li> <li>Sensitise data collectors about different concepts related to the needs assessment topic, especially in settings where people have limited or no idea of the ideal situation.</li> </ul>
Educating people about possibilities of occupational therapy without biasing the respondent towards the need for occupational therapy and factors pertinent to occupational therapy.	<ul style="list-style-type: none"> <li>Provided intensive training to data collectors. During training, discussed issues around informing of the possibility of occupational therapy without biasing the respondents to the extent possible and brainstormed strategies around this issue.</li> <li>Conducted mock interviews by the interviewers during training; trainer observed and provided feedback based upon practice scenarios.</li> <li>Disseminated informational brochure on occupational therapy at time of recruitment, as well as during data collection if participants required clarification on terms.</li> <li>Survey and interview questions moved progressively from knowledge, practice and experience of disability-related impairments to concepts of activity and participation.</li> </ul>	<ul style="list-style-type: none"> <li>Educate data collectors and participants well before the time of data collection so that data collectors can answer any relevant questions at the time of the interview, and participants have time to digest the information, make their own assessments about the need of the profession and obtain more information as necessary.</li> <li>Assign a variety of stakeholders to educate participants about the profession (e.g., doctor, physiotherapist, social worker, mental health professionals and higher officials, etc.) to mitigate conflict of interest when information is coming from occupational therapists.</li> </ul>
Logistics and practical challenges (e.g., coordination of large committee across institutions, time zones, cultures, staff turnover, etc.)	<ul style="list-style-type: none"> <li>Had dedicated coordinators and project team at both institutions.</li> <li>Hosted frequent committee meetings with available members during the time that is conducive to time difference.</li> <li>Shifted timeline as needed.</li> </ul>	<ul style="list-style-type: none"> <li>Allocate significant time to allow group and collaborative processes. This is critical when collaborating on a large team or a team spread across contexts.</li> </ul>

the team tried to balance these competing concerns. It also identifies additional suggestions to address these concerns based on our own reflections. Together, these two columns provide strategies to consider and implement during Phase I and II of a needs assessment for others attempting similar explorations.

To overcome the problem of introducing occupational therapy to our participants, consistent with the ICF (World Health Organization 2001), we framed the needs assessment around the concepts of 'activities and participation'. In the quantitative surveys, the concepts provided an opportunity for respondents to identify what knowledge and practice in the current health system might be lacking. For example, while respondents noted that current health services addressed functioning related to body functions and specific activities of daily living, they lacked knowledge and practice related to promoting full community participation. In qualitative interviews, the wording of activity and participation offered the opportunity to engender concrete images and examples of the impacts of disability in daily life.

There were, however, limits to the usefulness of these constructs in developing a rich understanding of disability in context, given the overriding understanding of disability as relating to underlying health conditions and the established norms and social structures in Ethiopia. Therefore, while interview data provided descriptions of the daily lives of individuals that showed them to be marginalised within the community, the interviews provided minimal insight into the social processes and environmental contexts that sustain this marginalisation. For example, some data collectors, being of the local culture, did not further explore how the lack of community participation and social roles was experienced and sustained.

In hindsight, we saw the need to sensitise data collectors more fully to the biopsychosocial model of disability that is a foundation to the ICF that served to guide our needs assessment questions. Another critical point to highlight is that disability and issues surrounding disability are not topics frequently discussed in the context (i.e., Ethiopia) in which the needs assessment was conducted; therefore,

individuals were not sensitised to talk about activity and participation. The lack of such proclivity among participants likely affected participants' responses to both our survey and interview questions. Further, data collectors, mainly qualitative interviewers, were sensitised to the ideas of activity and participation in their training to know how to probe to identify the gaps effectively when they did not already have this background knowledge. This would provide foundational knowledge and attitudes towards disability, which helped them explore the needs of individuals from a holistic approach accounting for all factors that impact activity, participation, health and well-being, an approach that is inherent in occupational therapy (World Federation of Occupational Therapy 2010). This could also reduce the potential of trainers unintentionally influencing the direction of data collection during interviews and surveys. For future studies, it is important to consider sensitisation of the data collectors, who, already well-grounded in the context, would then develop an intrinsic holistic approach to asking about disability and needs.

In Phase II (Assessment), even the terminology used to describe disability and participation was challenging to negotiate. Stereotyped, derogatory terms and figurative expressions are frequently used in Amharic to describe people with disabilities (Franck & Joshi 2017; Zehle 2014). As a result of this, the word that both interviewers and participants often used was the term 'sick'; thus, the meaning to be inferred from some interview passages was sometimes unclear. Likewise, there is no local word for 'occupational therapy', which is problematic even in English in terms of correct meaning and interpretation. Van Nes et al. (2010) discuss the challenges associated with language differences for qualitative researchers, given the fundamental way language influences meaning-making. In this study, we experienced challenges both in conveying these concepts that had no local term to participants and interpreting the nuances embedded in their responses. Van Nes et al. (2010) provide several suggestions, including interactive discussion of interview text with research team members who speak the local language using 'fluid descriptions of meanings' rather than one-word definitions (p. 315). They also suggest that the researcher works with the translator to work through the meaning of passages of text to agree on the best interpretation, given the researcher's understanding of the concepts under consideration and the translator's understanding of the language's subtleties. They also note the problems in using direct translations in reporting since once translated, the speaker's words are no longer their own. They advise careful translation to reach the best fit, particularly in metaphors and local expressions.

An additional challenge that further influenced participants' responses in Phase II was the nature of the built environment for the general population. While the natural environment of the country (e.g. rough terrain) is challenging for everyone's daily activities and participation regardless of ability, the problem is more profound for those with disabilities because of the inaccessible built environment, lack of assistive

devices, and stigma associated with disabilities (Katsui & Mojtahedi 2015; Tekola et al. 2020). This may have influenced responses from participants about the needs of persons living with disabilities, as the built environment would not be seen as a barrier specific to persons living with disabilities, but rather a general issue for all. As such, participants may not have identified this as a need to be addressed by health professionals. This may be because the ideal accessible environment seems to be largely unknown to the general public as well as persons living with disabilities. With this in mind, the team could have developed a better-shared understanding of this phenomenon and trained data collectors to elicit participants' personal experiences with accessibility in the built environment. This would have provided richer data on accessibility needs in the country from the lived experience of persons living with disabilities.

Our needs assessment was also challenged by the fact that access to participants was influenced by the types of services and supports that are available in the country. For instance, there are more supports and services in Ethiopia for those experiencing visual impairment (Franck & Joshi 2017) than for those experiencing invisible disabilities related to mental health issues. This impacted recruitment, limiting access to people with lived experience of mental illness and those with experience in delivering rehabilitation services in the mental health field. This is perhaps because there are strong advocacy groups for visual disabilities in the country, while mental illness continues to be a taboo topic in Ethiopia (Reta et al. 2016), and resources are limited to meet the needs of people with mental illness. People experiencing mental health issues may find it difficult to realise their rights and service needs compared to others for which services are more readily available. One crucial challenge we encountered during needs assessment was to identify the gaps between the actual (*what is*) and ideal situation (*what should be*) – a fundamental part of needs assessment (Hung & Altschuld 2013). This was challenging because people had limited or no understanding of occupational therapy and its role. The 'ideal situation' might look different from the status quo if this professional – occupational therapist – was part of the health care system. To overcome this challenge, we distributed informational brochures about the occupational therapy profession during the recruitment of respondents for the quantitative study and participants for the qualitative study. Additionally, participants were given an explanation of specific terms (such as 'activity' and 'community participation'), and common language was used (e.g., typical day, daily routine) as prompts during the interview process. Phase III (Post-assessment) was relatively less challenging as the network was already organised, the stakeholders were committed, and the consultations were lengthy but effective and fruitful.

## Limitations

There were some limitations related to our original needs assessment. Firstly, there was a lack of comparison groups

or control conditions that limited our ability to draw causal inferences from the findings. It was difficult for us to determine whether any identified needs or challenges were specific to the need for occupational therapy or if there were more general issues affecting healthcare or rehabilitation services in the selected regions. Research with more rigorous sampling methods and comparative designs would be beneficial to strengthen the evidence base for occupational therapy programme development in similar contexts. Secondly, the interviews were conducted in Amharic and later translated to English. Some depth of meaning may have been lost in the process of translation. Thirdly, a number of the participants with disabilities were Mastercard scholars at the University of Gondar. These participants may represent the most successful persons with disabilities in the community, and thus, data may not explore conditions for those individuals with disability who are the most challenged. Despite these limitations, we hope that others will find our experience helpful in conducting needs assessments before introducing a new programme in similar contexts.

## Conclusion

Needs assessment is widely used in identifying gaps and planning for actions to fill the gaps for a particular service need. However, it is not always straightforward to assess the needs, particularly in a situation where the ideal situation (*what should be*) is largely unknown. In addition to the challenges that may be inherent to needs assessment (e.g. realisation and prioritisation of actual needs) (Chernesky & Gutheil 2008), we encountered some unique challenges to introduce the concept pertaining to disability and the occupational therapy profession. This was because disability is not a regularly discussed topic in Ethiopia. Further, the role of the occupational therapy profession was largely unknown in the context in which we conducted the needs assessment. To that end, we have offered some lessons learned about needs assessment for researchers, needs assessors, and evaluators to consider. We believe that these lessons can be of value to other researchers or evaluators facing similar needs assessment challenges. This article thereby contributes to the literature related to methodological challenges in conducting a needs assessment, particularly within health service and rehabilitation systems.

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## Competing interests

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## Authors' contributions

S.M.A. contributed to the conceptualisation, methodology, visualisation and administration of the needs assessment. R.P.N. contributed to the conceptualisation and writing of the original draft of the manuscript. J.A.M. contributed to the conceptualisation and writing of the original draft. R.M.L. contributed to the conceptualisation, methodology and investigation of the study. T.K. contributed to the conceptualisation, methodology and formal analysis. C.M. and Y.S.Y. contributed to the methodology. S.G. contributed to the methodology, formal analysis, writing original draft and visualisation. D.K. contributed to conceptualisation, methodology and formal analysis. K.K. contributed to formal analysis, writing original drafts and resources. B.B. contributed to the methodology and writing original draft. A.M. contributed to the conceptualisation, methodology, formal analysis, investigation, visualisation, project administration, data curation, resources and supervision. S.F.D. contributed to conceptualisation, methodology, data curation and analysis, and project administration. N.M. contributed to conceptualisation, methodology, data curation and analysis, and project administration. H.M.A. contributed to conceptualisation, methodology, formal analysis, investigation, visualisation, project administration, supervision and funding acquisition for the needs assessment. S.M.A., R.P.N., J.A.M., R.M.L., T.K., C.M., Y.S.Y., S.G., D.K., K.K., B.B., A.M., S.F.D., N.M. and H.M.A. contributed to the writing of the manuscript, reviewing and editing that helped shape the manuscript.

## Ethical considerations

Ethical clearance to conduct this study was obtained from the Queen's University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board (HSREB) and the University of Gondar (No. 6025098 and O/V/P/RCS/05/354/2018, respectively). Written consent was obtained from all individual participants involved in the original needs assessment.

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## Data availability

Data sharing is not applicable to this article, as no new data were created or analysed in this study.

## Disclaimer

The views and opinions expressed in this article are those of the authors and are the product of professional research. It does not necessarily reflect the official policy or position of any affiliated institution, funder, agency, or that of the publisher. The authors are responsible for this article's results, findings, and content.

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