

# Work transitions after serious hand injury: Current occupational therapy practice in a middle-income country

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## Abstract

**Introduction:** Work-related transitions following serious hand injury can be complex for people with hand injuries and rehabilitation professionals supporting the return-to-work process. This study explored South African occupational therapy practice related to work transitions after a serious hand injury.

**Methods:** In this collective case study, maximum variation sampling was used to select seven occupational therapists involved in facilitating work-related transitions for people with serious hand injuries. Participants selected at least five cases that illustrated the breadth of their practice in terms of work transitions; these cases formed the focus of the semi-structured interviews. Data were analysed using inductive content analysis. Exemplar quotations were extracted to support emergent key themes.

**Results:** There was one overarching theme—*Ongoing appraisal of the fit between function and inherent work demands*—which comprised three stages: (1) *determining and facilitating readiness to work*; (2) *managing the risk and trauma of returning to work*, and (3) *implementing reasonable accommodation*. The central theme comprised six strategies that were used to optimise the transition process and achieve the best possible outcome.

**Conclusion:** The study highlighted the importance of work-related transitions that are context-driven, flexible, and involve multiple stakeholders. The occupational therapists demonstrated how they drew on their knowledge of local contexts to solve problems and generate effective individual strategies over the rehabilitation period. The findings may be applicable to other low- or middle-income countries where the return-to-work process may not be as predictable as high-income countries.

## KEYWORDS

employment, hand injury, occupational therapy, return to work, vocational rehabilitation, work

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## 1 | INTRODUCTION

Returning to work is arguably the most important rehabilitation outcome for working-age persons with serious hand injury. Whether a hand injury occurs unexpectedly or develops over time, it can nevertheless significantly impact performance of everyday occupations (Ammann et al., 2012; Bates & Mason, 2014), including work (Ammann et al., 2012; Kingston et al., 2016; Pichora & Grant, 2010; Siotos et al., 2018). Macro-environmental factors, such as labour legislation and the unemployment rate, strongly influence work opportunities (Cho et al., 2012) and impact on whether a person is able to return to work (RTW) after sustaining a serious hand injury (Siotos et al., 2018). Due attention must therefore be given to contextual issues when facilitating work transitions (or RTW) after serious hand injury. In this study, work transition was conceptualised as the process of re-entering work, including the changes people experience in what they “can do, [are] expected to do, or need to do” (Shaw & Rudman, 2009, p. 362). A serious hand injury was defined as an injury occurring unexpectedly or over time leading to the person being unable to work for 6 weeks or longer, or requiring reasonable accommodation, or work-related assistive technology.

The effects of a hand injury on physical and psychosocial components of function (Chan & Spencer, 2004) require a process of adaptation, which may last as long as a year (Ammann et al., 2012). The resulting disruption may prevent full participation in work on a temporary or even permanent basis. Re-entry into the workplace under these circumstances requires an occupational transition that may involve “taking on new sets of [work] occupations, fitting these new occupations into other ongoing occupations, and relinquishing some occupations” (Shaw & Rudman, 2009, p. 362). The process of RTW after a hand injury is complex (Shi et al., 2014) and may involve a range of approaches provided by different healthcare professionals and other role players (Vocational Rehabilitation Association, 2016). Occupational therapists address occupational disruption relating to work by restoring functional components where possible, and through adaptation where full function cannot be restored. They are therefore intimately involved in the rehabilitation process for people with serious hand injuries from the acute stages through to (re)settlement in work (World Federation of Occupational Therapists, 2016). Hand therapy practice has traditionally been dominated by the biomedical model, with a strong focus on remediating body structures and functions rather than participation (Fitzpatrick & Presnell, 2004; Winthrop Rose et al., 2011). However, several authors have advocated occupation-based approaches as a means to achieving better outcomes

### KEY POINTS FOR OCCUPATIONAL THERAPY

- Clinical reasoning was shaped by potential work outcomes throughout the rehabilitation journey.
- Contextual and personal factors related to the injury were equally important in shaping reasoning and intervention.
- Partnerships with stakeholders was key to achieving the best possible work-related outcomes.

(Chan & Spencer, 2004; Colaianni et al., 2015; Jack & Estes, 2010; Schier & Chan, 2007), which requires a dual focus to intervention (Robinson et al., 2016). A dual focus “includes enabling clients through the use of occupation” in addition to using exercise and physical agent modalities in treatment (Robinson et al., 2016, p. 293).

Using the International Classification of Functioning, Disability and Health (ICF) as a framework, vocational rehabilitation (VR) “may refer to a specific form of interventions that are primarily aimed to assist a person who has impaired, limited, or restricted work functioning, while considering contextual factors such as personal and environmental factors to achieve optimal work participation” (Escorpizo et al., 2011, p. 130). A Cochrane systematic review found a lack of high quality evidence for the efficacy of VR in improving RTW for people with traumatic upper limb injuries (Hou et al., 2017). However, VR remains an essential component of occupational therapy practice. In the context of this study, occupational therapists are the rehabilitation professionals primarily responsible for return to work and other work-related transitions. This includes work capacity evaluations and liaison with relevant role players in the multi-professional team and the work place.

A recent scoping review identified the strategies occupational therapists use to facilitate work-related transitions in this population as those directed at addressing the psychological consequences of the injury, assisting persons with upper limb injuries to develop coping strategies, pain management, working on components of function, communicating with employers and other stakeholders, and matching job demands to the client’s functional abilities (Uys et al., 2020). A broader scoping review on work-related transitions after hand injury, from the perspective of any healthcare provider, reported that most studies (15 of 26) investigated prognostic

indicators for RTW (Buchanan et al., 2020). Only one article, a single case study, related to intervention. Of the 58 potential prognostic factors identified in this review, the most commonly reported factors were: psychological impact of injury; severity of injury; nature of injury; hospitalisation and compensation; and work-related issues. Studies on patient perspectives indicated that the most important areas were dealing with the psychosocial impact of the injury, adapting methods to perform work tasks, contact with the workplace, and the worker compensation process (Buchanan et al., 2020).

Work occupations are often related to country contexts. In high-income countries (HICs), work occupations are becoming increasingly sedentary with the rise in jobs requiring skills in digital technologies (World Bank Group, 2019). There are also established support systems in terms of compensation, occupational health and safety and RTW focus. In low- and middle-income countries (LMICs) however, many workers are employed in industry (World Bank Group, 2019), which presents a range of risks to hands. The higher proportion of people employed in manual labour and in the informal sector (World Bank Group, 2019) places them at greater risk for injury (Gosselin, 2009; Siotos et al., 2018). In addition, people are often employed in the informal sector (Cho et al., 2012) and are therefore not protected by legislation. This puts greater stress on occupational therapists in these countries to find ways in which workers with hand-injuries can successfully RTW. For instance, injured workers in LMICs are more likely to find themselves in precarious employment (Cho et al., 2012) and are more reliant on manual labour type work requiring hand dexterity; this limits their re-employability, which could have dire consequences for the person and their family. Environmental and workplace constraints therefore have a strong impact on the way in which the work transition process is undertaken, on the complexity of clinical reasoning and on outcomes. The range and variability of factors that shape decisions in facilitating work-related transitions require expert clinical reasoning. Mattingly and Fleming's (1994) foundational work on clinical reasoning made the complexities of occupational therapists' clinical reasoning explicit and provided the basis for explicating occupational therapists' thinking in practice (Neistadt, 1998). More recent work in occupational therapy has further developed the notion of clinical reasoning (Harries & Harries, 2001), applied it to cognitive strategies (Toglia et al., 2012), evidence-based practice (Dougherty et al., 2016), and client-centred practice (Unsworth, 2004).

The availability of decent work as a form of social justice is essential for reduction of poverty, realisation of human potential and health. Paid work remains "the

main source of income for the vast majority of households worldwide" (International Labour Organization, 2019, p. 1). Progress towards achieving Sustainable Development Goal 8, which calls for the promotion of "sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all," (Frey, 2017, p. 1165) has been slower than anticipated. The 2020 World Employment Social Outlook Trends report (International Labour Organization, 2020) contains pessimistic projections for reduction of poverty and better working conditions in lower-income countries because of low economic growth.

Unemployment remains a significant problem in LMIC, with many employed workers continuing to earn wages below the basic cost-of-living, thus fitting the category referred to as "working poor" (Carr et al., 2018; International Labour Organization, 2020; Kuhn et al., 2018). When paid work is the only source of reliable income and unemployment is high, the quality of work tends to be deficient, in terms of job security, social protection, opportunities to voice concerns and other fundamental rights (International Labour Organization, 2020). The likelihood of workers remaining trapped in an unjust cycle of accepting work with remuneration below the legal minimum wage is higher in lower income countries (Carr et al., 2018). Despite a global decline in the rate of working poverty, low-income countries have made very little progress in this regard with projections including an expected increase in the number of working poor during 2020–21 (International Labour Organization, 2020). Occupational therapists in LMIC regularly work with clients for whom involvement in precarious work or self-employment in the informal economy are the only options available, thus requiring a broad set of competencies (Mavindidze et al., 2019). Considering the importance of RTW as an outcome of rehabilitation, it is surprising that so little evidence exists to guide therapists in LMICs on how best to facilitate work transitions (Uys et al., 2020). Of the few studies available, all are from HICs. Considering the importance of implementing contextually relevant strategies to address work transitions effectively, strategies effective in HICs may not be feasible in LMICs which points to the need for further research in LMICs (Uys et al., 2020).

The research question for this study was, *What is the nature of occupational therapists' practice (including reasoning) in the Western Cape, South Africa to address work transitions for people with serious hand injuries?* The purpose was to describe the occupational therapists' practice and reasoning in a middle-income country with the view to contributing to the evidence for work rehabilitation in LMIC. We wanted to capture the full range of services performed by individual occupational therapists and

were interested in seeing how much occupation-based practice they used. The aim was therefore to describe the clinical reasoning and practice of occupational therapists in the maintenance and restoration of the worker role in people with serious hand injuries from one LMIC perspective.

## 2 | METHODOLOGY

This article is reported according to the Consolidated Criteria for Reporting Qualitative Research (COREQ) (Tong et al., 2007).

### 2.1 | Research design

We followed a qualitative approach which Sandelowski (2000: 337) described as “especially amenable to obtaining straight and largely unadorned (i.e. minimally theorized or otherwise transformed or spun) answers to questions of special relevance to practitioners and policy makers.” A collective case study design (Stake, 1995) with two case levels was used. The first level comprised seven occupational therapists that each narrated at least five actual case examples of persons with hand injuries undergoing work-related transitions. The second level therefore comprised the selection of case examples that were narrated. Cresswell’s (1998, p. 485) conceptualisation of case study as “an in-depth exploration of a bounded system (e.g. an activity, event, process, or individuals) based on extensive data collection” was employed. In our case, the bounded system was the clinical reasoning process of a number of occupational therapists.

### 2.2 | Recruitment and sampling

We applied purposive, maximum variation sampling (described below) to select occupational therapists who could provide different perspectives on RTW services provided to persons with hand injuries. Because the inequality brought by socio-political and economic forces impacts the types of services and access to occupational therapy services, the variation we sought pertained the services offered to client groups rather than the individual characteristics of occupational therapists. First, variation was sought by including occupational therapists in private practice (mainly offering services to clients with health insurance) and the public sector (predominantly servicing the uninsured population). Second, variation was sought in the type and level of facility at which occupational therapists

worked (to capture various stages of the rehabilitation process). Recruitment commenced with us approaching occupational therapists working in the areas of hand therapy or work practice in and around Cape Town that we were aware of. We approached two therapists working in specialist hand units at the two tertiary hospitals in the Western Cape, two at two secondary level hospitals and one at a community rehabilitation centre. Three of these five therapists declined to participate; one only focussed on management of acute symptoms before referring to another occupational therapist for rehabilitation, including management of work-related transitions, one did not treat many people with hand injuries, and one had only recently started work at the facility and did not have sufficient experience to draw on. Additional participants were identified by contacting key informants with knowledge of the practice landscape. Key informants included the owner of a large private hand therapy practice, a university educator who had been involved in the national hand therapy society for many years and knew many of the therapists working in the Western Cape, and an occupational therapy manager at a primary care clinic who was familiar with the services offered by the other therapists at primary level. Potential participants identified by these key informants were contacted telephonically to explain the study, determine eligibility and establish their willingness to participate. Emails were sent where telephonic contact was not possible.

Seven occupational therapists participated in the study (Table 1).

### 2.3 | Data collection

Once participants had given consent, we asked them to select at least five cases of people with serious hand injuries where the focus of their intervention was return to work. We asked them to specifically choose cases that illustrated the breadth of their practice in terms of work transitions; these became the focus of the interviews. We reasoned that focussing the interviews on cases participants had treated would help them think more specifically about their reasoning and actions related to work transitions.

The interview questions used to elicit discussion around each case comprised:

1. What were your main focal points with each patient in terms of return to work?
2. How do you feel about the outcome(s) that was/were achieved?
3. What else would you have liked to do that you did not get to do?

TABLE 1 Description of sampling

Participant pseudonym	Funder	Type of facility	Stage of recovery			Type of practice		
			Early-acute	Intermediate	Late-chronic	In-patient	Out-patient	Work-based
Madelein	Public	Tertiary hospital	x	x	x	x	x	
Lizette	Private	Private (all-in-one)	x	x		x	x	x
Sarah	Private	Rehab facility	x	x			x	x
Tasneem	Private	Rehab facility	x	x	x		x	x
Liesbet	Public	Community rehab Centre		x	x		x	
Sumaya	Public	Secondary hospital	x	x	x		x	
Wendy	Public	Community clinic		x	x		x	

The three questions were applied to each of the cases that participants treated, thus eliciting a narrative focused on the interventions provided in each case, from onset to termination. Participants thus shared their reasoning, which generally included envisaged outcomes, strategies to achieve these, progress and limitations along the way, modifications they had to make along the way and outcomes achieved.

Semistructured interviews were conducted by one or other researcher at selected locations and times. Interviews lasted between 60 and 90 min. Five interviews were conducted at participants' place of work, one took place in a coffee shop and one at the participant's home. Interviews were audio-recorded and transcribed verbatim by an independent paid transcriber.

## 2.4 | Data management and analysis

Transcriptions were imported into *NVivo 8, released 2008* (QSR International Pty Ltd, 2008). and inductive content analysis was performed to summarise the information conveyed by the data (Sandelowski, 2000). Both authors coded the data together, grouped the codes into categories and drew connections between the categories. Finally, the overarching theme was identified.

## 2.5 | Trustworthiness

Trustworthiness was addressed through researcher and participant triangulation (Curtin & Jaramazovic, 2004) and peer debriefing (Krefting, 1991). As we have long-term involvement in either hand therapy (HB) or work practice (LvN), some participants were known to

us. Because our experiences in performing occupational therapy roles were similar to those of our participants, we recognised our “insider” perspective. We considered the potential advantages to both the “insider” and “outsider” positions—with recognition that neither is preferred above the other (Blythe et al., 2013). As insider researchers, we reflected on the impact this might have had on our research. A potential disadvantage might have been a tendency for participants to provide a positive picture of services offered and outcomes achieved. A potential advantage was having first-hand knowledge of challenges faced in practice, which we felt created an opportunity for participants to share service limitations freely. Findings were presented and discussed during a verification workshop to which all participants plus additional occupational therapists working in the field were invited. Member checking of interviews occurred during the verification meeting (Padgett, 2012). The themes and categories that emerged from data analysis were presented to participants in the verification workshop. Participants confirmed these findings; no changes were therefore made.

## 2.6 | Ethics

Ethical approval was obtained from the University of Cape Town Faculty of Health Sciences Human Research Ethics Committee (HREC Ref: 282/2017). The Declaration of Helsinki (World Medical Association, 2013) principles were applied throughout the study. Participants provided written consent to participate and are given pseudonyms for anonymity. Participants received a small monetary stipend to cover costs associated with interviews; this was not sufficient to coerce participation.

### 3 | FINDINGS

The findings revealed that participants' practice was informed by an ongoing process of clinical reasoning that was strongly directed at protecting and promoting their clients' ability to work throughout the rehabilitation journey. We captured this trend in the central theme—*Reasoning related to matching tasks with function*. The central theme permeated three sequential and overlapping stages that captured participants' main intention related to the work-related transition—determine and facilitate readiness to work; manage the trauma of return to work; and implement reasonable accommodation (Figure 1).

The central theme comprised six strategies that were used to optimise the transition process and achieve the best possible outcome following serious hand injury (Figure 2).

#### 3.1 | Central theme: Reasoning related to matching tasks with function

This theme encompassed the ongoing appraisal of the fit between the client's function and the inherent demands of their specific work. This process was evident in participants' clinical reasoning, which was organised around a strong central theme that emerged as the core focus of their practice. At the onset of treatment, participants neither knew what the functional outcome(s) would be nor whether clients would be able to RTW. Thus, functional outcomes were keenly monitored; always bearing in mind how improvement, or lack thereof, would affect the client's ability to fulfil the inherent requirements of the job. At the same time, participants were thinking about possibilities to modify their client's current work or find alternative temporary work within the same workplace. Their clinical reasoning was underpinned by body structure considerations and the inherent demands of the job for which the client was being prepared to return. They

kept the client's prognosis, availability of job opportunities and limitations that could impact their ability to work in mind throughout. This reasoning process seemed to be ever-present as a foundation for all steps taken during intervention. Participants' reasoning and intervention strategies showed ongoing consideration of changes in functional outcome for the person with the hand injury and work possibilities in order to achieve the best fit in the shortest space of time. The reasoning process involved three distinct stages.

#### 3.2 | Stages in the process of return to work

While tacitly engaged in ongoing deliberations about matching job demands and function, participants' narratives revealed three stages that featured prominently—*Determine and facilitate readiness for work*, *Manage the trauma of return to work* and *Implement reasonable accommodation* (Figure 1).

#### 3.3 | Stage 1: Determine and facilitate readiness for work

The first stage in the process of return to work involved assessing the client's capacity to return to work. Assessing functional capacity is a standard part of the occupational therapy process; however, in the limited resource context of this study, the emphasis placed on this part of rehabilitation was pronounced and occurred right from the start of the therapeutic alliance. While assessment was used to determine readiness for work, it was incorporated into treatment sessions as far as practically possible. Therapists drew on a range of strategies to both assess and facilitate readiness to RTW. They readily used resources at their disposal to simulate aspects of the client's job to assess ability to perform tasks. Simulation

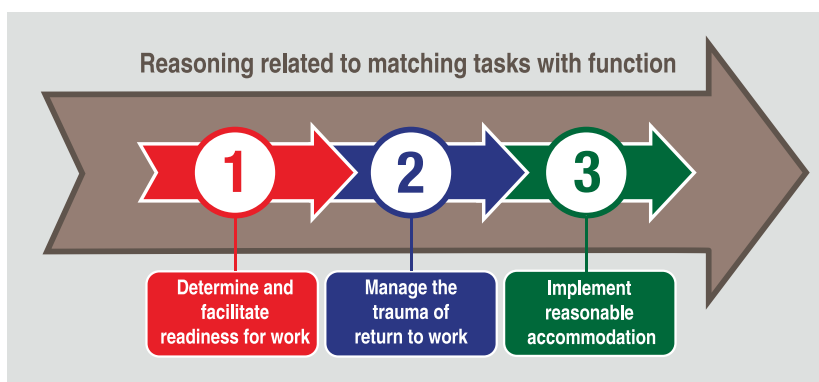


FIGURE 1 The three stages in the work-related transition process

**FIGURE 2** The six strategies used to optimise the work-related transition process



also allowed participants to assess function and judge their clients' ability to cope with the demands of their job; different methods of performance were trialled until an appropriate solution was found:

[A roof contractor] really struggled climbing a ladder with this [dysfunctional] arm because he could not do wrist extension and he also could not do supination. It got better as time went on, but it was quite an accomplishment to be able to carry something with both his hands on a ladder (which was simulated in the rehabilitation unit). (Sarah)

Participants were deeply aware of the need to build confidence in their clients through creating opportunities for them to try out particular aspects of their jobs under supervision. This built confidence and reassured clients and therapists about readiness to RTW which Lizette illustrated in this quote: "I let her [paste stickers on boxes] while I was there. And when she saw that she could do it, she was happy."

Work visits were deemed important by all participants; however, not all had the time or resources to conduct visits. Work visits were used to determine the client's ability to perform the job, the types of accommodations that might be required, and to establish whether

alternative forms of work were available to the client. Participants who were not able to do physical work visits explored the various aspects that comprised work and asked their clients to demonstrate or describe aspects that were potentially challenging. All participants voiced their preference to conduct actual work visits, which they felt would provide a more accurate means for establishing readiness for RTW which was captured by Lizette as follows: "I arranged a work visit as well because I wanted to see what she needed, what she had to do before and just to see what else is available for her to do."

As clients approached the point of having to return to work, participants also incorporated approaches that dealt with clients' vulnerabilities associated with RTW including managing the emotional aspects of returning to the workplace, which may have been the site where the injury occurred.

### 3.4 | Stage 2: Manage the trauma of return to work

This stage involved managing the trauma of return to work. The transition from rehabilitation to being back at work evoked memories of the events leading to the hand injury and triggered feelings associated with the incident. Participants identified the potential risks of clients

returning to work without being fully prepared from an emotional perspective. Some clients even had physiological responses associated with returning to work for the first time: “A lot of the time they get there, and they are sweating, they are shivering. They don’t want to be near the machines ... hearing those sounds and the emotional trauma comes back” (Tasneem).

Participants noted a broad range of responses amongst their clients, from intense emotions (as described above) to excitement at returning to work. In most cases, clients need practical solutions to alleviate anxiety. Return to work often came too early because of limited sick leave available to clients. In these cases, participants used their skills to reassure clients by explaining how returning to work would contribute to their recovery. This often involved implementing reasonable accommodation, which may have been temporary or permanent, in various forms.

### 3.5 | Stage 3: Implement reasonable accommodation

Reasonable accommodation was firmly established as a component of practice for all participants. This was informed by a Social Model of Disability perspective which presses for change towards creation of inclusive environments rather than continued focus on restoration of performance deficits. For some client’s accommodations involved graded RTW; this was negotiated with the employer and largely depended on the employer’s attitude and willingness to accommodate the client: “work was accommodating ... we asked them to first just take him back for a few days per week. Not a full day, and then we asked them to give him breaks in-between and explained to them that he will be able to work, but his endurance is not there yet” (Wendy).

Participants issued assistive devices if they felt they would make it easier for clients to manage their work (and home) activities: “for instance, with Carpal Tunnel syndrome, issue them with two wrist braces ... one for work and one for home” (Sumaya). Some clients required environmental adaptations which sometimes extended to reducing expected productivity levels. Other accommodations included shifting tasks within the job, making arrangements for alternative work and moving to a different job in the same company. Adaptations sometimes involved assistance from others for certain aspects of the job: “[A carer] had a second carer that came to help with transfers” (Liesbet).

Some clients were unemployed at the time of sustaining the hand injury, or they were employed on a short-term contract or sessional basis and thus lost their job

when they were injured. In these situations, participants offered advice on types of work their clients would be able to do to guide the process of finding new employment:

... because there is no work or nothing to negotiate, we contacted [name of training provider] and then sent the documents off for him to start in a learnership programme. And then hopefully that will introduce him to the open labour market so that he can start studying or doing some sort of work. (Wendy)

### 3.6 | Strategies used to facilitate return to work

The central theme was supported by six strategies that participants consistently used throughout the three stages of the work transition process (Figure 2). These strategies focussed on optimising the transition to work process and achieving the best possible outcomes in the shortest time. The central motivation underpinning this process was a shared concern to preserve clients’ participation in work as far as practically possible in order to prevent the hardship that would be endured as a consequence of job loss. Managing risk played an integral role, as did advocacy in protecting against unfair and or unlawful dismissal from work.

### 3.7 | Liaison with the employer

Contact with the employer was a key component of intervention highlighted by all participants. They positioned the employer as a partner and would, without exception, appraise the level to which the employer was willing to assist in facilitating RTW. They also positioned the employer as “client” and did what they could to educate the employer on how best to support the RTW journey:

We do the initial assessment and then ... we immediately make contact with the employer, just to explain to them, the patient was referred to us, this is going to be our plan and just to see whether they are willing to accommodate the patient .... (Lizette)

### 3.8 | Educating the client and employer

Educating clients was an important strategy for preventing re-injury or exacerbating the symptoms.



Participants took care in understanding what the job entailed so that they could educate the client regarding potential problems and how to avoid them: “So then they would have to explain to me exactly how they do their job ... and I educate them on ... where there could possibly be areas of difficulty” (Madelein).

With some clients, there was a real danger of disrupting tendon or nerve repairs by returning to work early. Participants therefore balanced the client’s need to RTW with the precautions that had to be applied after surgery; this often entailed educating both client and employer.

### 3.9 | Management of risk

Participants were actively involved in ensuring that potential risks associated with returning to work were managed in ways that were acceptable to both client and employer. An ongoing dimension of participants’ narratives was their clinical reasoning in which work demands were juxtaposed to rehabilitation needs. They not only considered the ultimate risks associated with work for clients with reduced function, but they also had to make the best decision in terms of gradual exposure to elements of work, and support clients who were anxious about the risks associated with RTW:

So, I think it’s very much a team approach in terms of me and the patient ... a lot of the times they will also say “no, no I cannot” – where I would think – “you can actually go back, your job is not that physically taxing”. But ... it’s the fear; because they do not understand and then I will sit with them and go ... “explain to me your whole job, day to day, I want to know exactly what you do” .... (Madelein)

Managing risk, alongside their clients, was a responsibility participants took seriously; they regularly cited the potential consequences of making a mistake with this aspect. Employers also required guidance during their appraisal of risk associated with the injured worker returning to work: “his employer was a bit concerned about safety, so, we had long discussions ... about how to keep him safe and how to help him gradually integrate back into work” (Sarah).

Participants spoke with empathy about clients who opted to RTW in less-than-ideal situations, having to accept the personal risk clients were taking:

But a lot of them are then thrown in the deep end ... on the fishing boats, you cannot even

pull that cable with a normal hand ... [it hurts], so how are you going to do it with an injured hand? (Madelein)

### 3.10 | Managing time away from work

For some clients, work demands and rehabilitation requirements created a conflict of interests because taking time off work to attend rehabilitation appointments was difficult. Clients generally placed the need to work above their rehabilitation needs. Participants would, in such cases, assist clients as best they could in their quest to limit the amount of time off work by offering home programmes, educating family members and keeping rehabilitation sessions to the minimum:

I had a patient with Carpal Tunnel, a lady who was an apple picker [who had to return to work before it was advisable] ... So I explained to her [what she could do] ... and showed her the resting hand splint ... she needed to go out to work. So we say what is functional and they can do that. (Sumaya)

The participants lamented poorer functional outcomes, perceived to be the result of suboptimal adherence to rehabilitation protocols but justified their clients’ reasoning for not complying with follow-up or resorting to other forms of intervention in order to protect their jobs.

### 3.11 | Minimising the impact of the injury

Some clients were concerned about being able to continue with their work despite the injury. In these instances, participants weighed the pros and cons of the job requirements and the client’s injury and generated solutions that minimised the impact of the injury on the client’s ability to work:

[The client] will go, “Hmm, but I do not know how I am going to hold the hammer; I know how heavy it is, I actually think I am not going to be able to hit it – it’s going to be sore when I hit it.” [Participant explaining her reasoning] Do we have to wait a little bit, and we book [the client] off for a little bit longer, and strengthen [the hand] in that time? Sometimes you just need bone healing, you cannot do anything, you have to wait ...

because you do not want to have non-union, because then you will have pain for the rest of your life. (Madelein)

Participants often liaised with the employer to provide light duties so that the client's symptoms were not exacerbated while awaiting surgery or recovery. Sometimes, however, the client's desire not to cause any disruption at work led them to refuse the accommodations their employer offered:

... she refused to not be at work because that's her bread and butter ... she cannot have the repair done now because she needs to be at work. ... So even though communication was made with the employer to accommodate her for lighter duties, she pushed through because she wanted to work. (Sumaya)

At times participants needed to assist by negotiating conditions of work with employers. Examples included advocating for sick leave to attend rehabilitation sessions, consultation on labour-related legislation to avoid unlawful practices and giving practical advice: "I spoke to the production manager ... about paying the guy because he just was not [able to afford to attend rehabilitation]" (Sarah).

### 3.12 | Advocacy for the right to work

This strategy had two different foci depending on whether the participant had work to return to or not. If they had work to return to the therapist ensured their rights were protected and that the client and the employer understood those aspects of legislation that applied. If they did not have work to return to the occupational therapist supported them in considering potential work opportunities and facilitated the process of obtaining these.

Participants who were permanently employed at the time of the injury enjoyed protection of labour legislation preventing unfair dismissal on the grounds of illness or disability. Participants counselled their clients on their rights and complied with the administrative steps required by legislation. When employers were in breach of legislation, participants educated the employers and advocated for the rights of their clients:

... they did not want to claim injury on duty, because [the employer] was his brother-in-law and he did not want his brother-in-law

to get into trouble. So, I had to ... find information for him on the labour law and injury on duty claim, so that he could understand that ... he is not going to penalise his brother-in-law ... he is still entitled to claim. (Liesbet)

All the participants applied reasonable accommodation as far as possible. They drew on the Code of Good Practice (2015) and Technical Assistance Guidelines on the Employment of Persons with Disabilities (2017) to guide their actions and to counsel participants and employers alike. The Compensation for Occupational Diseases and Injuries Amended Act (COIDA) (Republic of South Africa. Department of Labour, 1997) was used when the hand injury was sustained in the workplace.

## 4 | DISCUSSION

The study aimed to describe the clinical reasoning and practice of occupational therapists in the maintenance and restoration of the worker role in people with serious hand injuries from one LMIC perspective. The findings highlight the complexities associated with RTW that are central to the reasoning process of occupational therapists in South Africa, a middle-income country with high unemployment and variable support for injured people to RTW.

Mattingly and Fleming (1994) highlighted the complexity of occupational therapists' clinical reasoning when making decisions in the context of unknown outcomes. Our findings demonstrated this when, at the onset of treatment, participants neither knew what the functional outcome(s) would be, nor whether clients would be able to RTW. Thus, functional outcomes were keenly monitored; always bearing in mind how improvement, or lack thereof, would affect the client's ability to fulfil the inherent requirements of the job. At the same time, participants were thinking about possibilities to modify their client's current work or find alternative temporary work within the same workplace. This focus on enabling clients to RTW by making adjustments or modifications is supported by previous studies in which clients with serious hand injuries found that strategies, such as changing their working technique, asking for assistance with parts of a task, compensating using technology and changing jobs in the same company, enabled them to RTW successfully (Cabral et al., 2010; Ramel et al., 2013).

Participants considered various scenarios in which they weighed up the client's abilities and matched those with the type of work possible. This created an "if this, then that" type of reasoning that was ongoing, operating

at a tacit level and forming the foundation for clinical decisions and actions that were communicated as the focus for the intervention. As such, we argue that the core thread occupational therapists used to direct their treatment took the character of conditional reasoning and operated as a taken-for-granted directive (Mattingly & Fleming, 1994). When it was clear that return to the same place of work would not be possible, participants supported clients' plans and attempts to find or create alternative employment. At the different stages of the recovery process, participants' clinical reasoning centred around achieving the best fit considering residual function, competencies and the inherent requirements of existing work or opportunities for new work. They weighed up risk throughout the process, especially in terms of timing the work activities their clients could resume during the rehabilitation journey. For clients who would not acquire sufficient function to return to their original work, reasonable accommodation, re-deployment within the workplace or finding alternative work was considered. Where the context permitted, work visits were done, and clients were placed in jobs they could do with the functional abilities they had. Large components of participants' clinical reasoning were tacit, automatic, and fluid, always focussed on creating the best possible outcome for the client. While we have argued that the central thread of therapists' clinical reasoning took the form of conditional reasoning, our findings also show examples of how interactive and narrative reasoning, as described by Neistadt (1998) were drawn on. Our participants narratives illustrate how they co-constructed realistic RTW stories with their clients which developed over time as their understanding of the client's illness experience and their needs and desires grew. This process illustrates Unsworth's (2004) notion of the reciprocal relationship between interactive reasoning and client-centred practice.

Even when participants worked in facilities dominated by a biomedical culture, their clinical reasoning involved balancing biomedical and work perspectives, always with a view to the best future for their client. This is akin to what Robinson et al. (2016) referred to as taking a dual focus within hand therapy—a biomechanical approach alongside an occupation-based approach. Mattingly and Fleming (1994) referred to this as “straddling two discourses”—restoring clients to satisfying lives, and “fixing body parts”. According to Hooper and Woods (2002), this focus on treating the whole person reflects a pragmatist approach. Essentially, pragmatism views humans holistically (Hooper & Woods, 2002). Holism is a hallmark of occupational therapy practice and is interpreted to be broader than a bio-psycho-social perspective by including participation

in the context and performance of meaningful roles (Colaianni et al., 2015; Drolet & Désormeaux-Moreau, 2016). From a pragmatist perspective, occupational therapists aim to follow through with intervention, beyond remedial and rehabilitative strategies, in order to support the restoration of role performance within the person's particular context.

Participants worked in partnership with their clients, employers, family members and relevant administrators of funders of services; achieving the best cooperation from these stakeholders was key in the rehabilitation process. Participants did not wait for recovery to be complete to make work-related decisions; they advocated for temporary work accommodation to enable participants to start work as early as possible. This focus is supported by a study that found that prolonged time off work negatively impacts RTW (Chen et al., 2016; Wong, 2008). In addition, Cabral et al. found that clients wanted to resume work as soon as possible after a hand injury (Cabral et al., 2010). For this reason, participants established contact with relevant role players early in the rehabilitative process—sometimes as soon as the first session—and developed and maintained a cooperative relationship with them as best they could. Because serious hand injuries take time to heal and for function to return, participants attempted to foster good relationships with employers who were willing to consider modified work. Liaising with the employer was vital throughout; as clients improved, participants continued to liaise with employers to advocate for jobs that matched their client's functional improvements until recovery was complete or had reached a plateau. Provided they were working with supportive employers, participants offered a graded process of recovery within the workplace. The importance of support from the workplace is acknowledged as an important factor for successful RTW after a hand injury (Cabral et al., 2010). For clients without a job to return to, potential work options informed intervention in the same way as for those clients who did have jobs.

The context within which participants practiced shaped and informed their reasoning, specifically the macro-economic factors. On the one hand, participants were aware of factors such as high unemployment and a largely unskilled workforce which limit employment opportunities, and conversely, the country's progressive labour legislation which offers protection against unfair dismissal on the grounds of illness or disability. For occupational therapists in LMICs the worker role is accentuated because work opportunities are scarce and earning an income is the only sustainable mechanism through which household needs can be met (Cho et al., 2012). Participants in our study therefore did all they could to *determine and facilitate (re)admission to work*.

We anticipated that strategies used by occupational therapists in LMICs to facilitate RTW would be different from those in HICs. A recent scoping review on work transition following hand injury found no interventions specifically focussed on facilitating RTW (Buchanan et al., 2020). Sources focussed almost exclusively on prognostic factors. Three sources included intervention, all of which fitted bio-psycho-social rehabilitation with no specific follow-through into the domain of work. A scoping review by Uys et al. (2020), focussed exclusively on interventions for management of work-related transitions that fit the scope of occupational therapy. Some of the work specific strategies reported similar practice elements to those our participants used, namely, matching job demands with functional ability, making recommendations for reasonable accommodation and task adaptation. Our findings demonstrated a more specific focus on RTW and an unique focus on sourcing alternative work opportunities when return to the original workplace was not possible.

#### 4.1 | Limitations

The findings are not necessarily generalisable to other contexts; however, the study provides evidence of occupation-focused practice because re-establishing clients' participation in the occupation of work remained at the forefront of the therapists' thinking and shaped every decision they made. Having two interviewers could be perceived as having a positive or negative influence on findings, depending on the stance taken. The open-ended, unstructured nature of qualitative interviews is dependent on building rapport because there is no expectation or desire to achieve objective or standardised answers.

## 5 | CONCLUSION AND RECOMMENDATIONS

This study is the first we know of to report on occupational therapy engagement in work transitions after serious hand injury from a middle-income country perspective. The complexity of the clinical reasoning required to deal appropriately with injured workers in the South African setting highlights the importance of ensuring that work-related transitions are context-driven, flexible, and involve multiple stakeholders. Key learnings are that: regular review is essential; graded RTW incorporating different work possibilities should be considered early in the recovery process; employers need to be engaged early in the rehabilitation process, and

continuously; and the patient and family need to be involved in decision-making and prepared psychologically for the RTW journey. The occupational therapists in this study drew on their knowledge of local contexts to solve problems and generate effective individual strategies over the rehabilitation pathway. The findings of this study may be applicable to other LMICs where the RTW process may not be as predictable as in HICs.

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#### CONFLICT OF INTEREST

The authors declare no conflict of interest.

#### AUTHOR CONTRIBUTION

The first author obtained funding for the study. Both authors developed the proposal, conducted all parts of the study, wrote all drafts of the manuscript, and agreed on the final submission version.

#### DATA AVAILABILITY STATEMENT

Author elects to not share data

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