

Occupation-based practice: Developing a new instrument

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Abstract

Rationale and objective: Occupation-based practice (OBP) is a treatment approach unique to occupational therapy. It harnesses the power of occupation to achieve health and well-being. Most hand therapists are occupational therapists, however, current hand therapy treatment methods are component-based, focussing on physical impairments. This is despite an emerging body of evidence that supports the effectiveness of OBP with hand conditions. To explore the use of OBP in hand therapy, the knowledge, attitudes and practices (KAP) of South African occupational therapists towards OBP needed to be first established. There was no contextually-relevant instrument for this, thus this paper reports on the development processes of a new instrument to capture KAP in OBP in South African hand therapists. **Method:** Questionnaire development followed the Burns et al (2008) methodology. Items were identified following a comprehensive literature search. Face and content validity, clinical utility, and validation of the subsequent Afrikaans translation were undertaken by two purposively-selected sets of participants (experts and peers). Data collection involved cognitive interviewing, iterative email correspondence, face-to-face discussions, and member checking. Final adjustments to questionnaire wording were made through consensus discussion between the first and second authors. **Results:** Four therapists participated. Seventy-nine questionnaire items were retained, with three items being removed as they were unclear, or did not measure constructs appropriately for context. The final survey instrument had face and content validity and consisted of 63 KAP items and 16 demographic questions. **Conclusion:** This is believed to be the first instrument designed to capture valid information on KAP in OBP in hand therapy in South Africa. It will assist in identifying gaps in practice quality, and underpin design of effective strategies for education about, and implementation of, OBP within hand therapy. The instrument is suitable for adaptation to other fields of occupational therapy practice in South Africa, and internationally.

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Keywords

occupation-based practice; knowledge, attitudes and practices; survey development; occupational therapy; hand therapy

1 INTRODUCTION

Occupation-based practice (OBP) is a treatment approach which encompasses the therapeutic use of occupation.^{1,2} It is used mostly by occupational therapists.^{1,2} OBP aligns with the profession's philosophical foundation, which is guided by the belief that health and well-being are strongly associated with the occupations people perform.³ In South Africa, most hand therapists are occupational therapists.⁴ Due to the dearth of occupational therapists in South Africa and the resultant demand to manage consistently large caseloads, it is essential that therapists are equipped to provide hand-injured patients with the most effective, cost-efficient care. Evidence-based practice is proposed as one way of ensuring that optimum care is delivered, and received, at every healthcare contact.⁵

Hand injuries are common and often catastrophic in South Africa due to poor work conditions and high rates of road traffic accidents and interpersonal violence.⁶ Hand therapy in South Africa is potentially complex because of the range of occupations which exist and injuries which can occur; occupational therapists therefore need to be conversant with current evidence in order to provide the most effective, and cost-efficient, care.

The strong presence of occupational therapists in the hand therapy arena should equate to an occupational focus in practice and research. However this does not appear to be the case. A mapping review of hand therapy publications over a ten year period exploring the alignment of evidence underpinning practice, found that hand therapy research is dominated by exercise and orthotic interventions focusing on specific diagnoses.⁹ Similarly, surveys conducted in Australia, Israel and the USA^{8,9,10} found that intervention and research focussed on body structures and functions. The same trend was shown in a recent South African study which found that hand therapy assessments addressing activity and participation (occupation) were used infrequently.¹¹

OBP is supported by a growing body of evidence that suggests that it is more effective than component-based practice.^{3,21,25,41,42,43,44} Therefore, identifying gaps in knowledge, attitudes and/or practices is essential in the development of strategies for effective interventions. Our intention was to obtain a comprehensive understanding of how occupational therapists were implementing OBP in South Africa, when dealing with injured hands. This knowledge could assist in strengthening the quality of occupational therapy hand rehabilitation provided in South Africa (in terms of improved occupational performance and occupational engagement outcomes). In order to determine this, an instrument that could assess these components was required. However, an extensive literature search found no comprehensive survey instrument from any country which assessed knowledge, attitudes and practices (KAP) about OBP. The main emphasis in the literature on OBP appeared to be on individual aspects of OBP such as knowledge^{12,13}, attitudes/perceptions^{14,15,16} and practices, with a specific focus on either assessment or treatment alone.^{9,11} Thus there was a knowledge gap in terms of the availability of a comprehensive survey instrument to measure occupational therapists' KAP in OBP.

This article reports on the development of a new instrument to measure the KAP of hand therapists using OBP, relevant to South African contexts.

2 METHODOLOGY

2.1 Ethics

The study was approved by University of Cape Town Human Research Ethics Committee (HREC REF: 208/2018) in May 2018.

2.2 Reporting framework

This article is reported using the STROBE checklist.¹⁷

2.3 Study design

This was an instrument development and validation study based on methodology described by Burns et al.¹⁸ After developing the draft instrument from a literature search, psychometric properties of face and content validity were tested, and clinical utility was addressed. An Afrikaans translation of the instrument was subsequently produced and validated.

2.4 Validating the instrument throughout its development

Methods included recruiting panels of expert and peer occupational therapists, and engaging them with cognitive interviewing, iterative email correspondence, face-to-face discussions, and member checking.

2.5 Setting

South African occupational therapy practice.

2.6 Participants

The study included two purposively selected sets of participants. The first group comprised occupational therapy experts with more than ten years of experience in hand therapy, who were employed at a tertiary education institution in South Africa, and had published in the field. They had extensive knowledge of OBP and experience in survey methodology. The second group consisted of peers who had, or were completing, a post-graduate degree in occupational therapy, and had worked in the field of hand therapy for more than five years, but were no longer actively practicing. This group was recruited so as not to reduce the potential pool of survey participants for a national study to determine KAP nationally.

2.7 Recruitment

Due to the small pool of experts in this area in South Africa, only two people met the inclusion criteria. Both were known to the authors and were recruited by email invitation (April 2018). Peers were recruited by personal invitation based on convenience sampling, namely they were known to the first author and could be readily recruited. All participants were recruited simultaneously.

2.8 Bias

Expert opinion will always be influenced by biases such as personal experience, preferences, workplace exposure and relationships with the researchers.¹⁹ Attempts were made to minimise bias by recruiting participants who reflected some diversity in terms of practice area, research interest, language and experience in occupation-based hand therapy. We also requested participants to be honest in their responses, however, we acknowledge that expert bias may still have been present due to the small pool of experts available in this area.

2.9 Process of instrument development

Established principles of survey design were applied.¹⁸ The steps taken to develop and validate the survey instrument are outlined in Table 1.

[Place Table 1 here]

2.9.1 Step 1: Item generation

Before developing the questions, the constructs that we intended to measure required identification and definition. These included KAP, as well as demographic questions. A database search was undertaken to identify aspects of OBP and KAP that should be included in the questionnaire. Electronic searches of CINAHL (Cumulative Index to Nursing and Allied Health Literature) via EBSCOhost, Pubmed and Google Scholar were conducted between July 2017 and March 2018 using the search string hand therap* AND (occupation* OR occupation based practice* OR occupation based intervention OR occupation as a means and occupation as an end). These keywords were chosen based on the different operational definitions for the concept of OBP used in previous studies. Papers had to be in English and published from 2000 onwards. A total of 26 papers were retrieved during the database search and used in the development of the survey items.

As no existing questionnaires measuring KAP related to OBP in hand therapy had been identified in the first database search, studies investigating KAP as single constructs in hand therapy literature, or in related areas, were sought, and relevant items were identified. Key points were extracted from the definitions of each construct, and relevant items were identified and extracted^{8,9,20,21,22,23,24} (see Table 2). As the literature on occupation-based hand therapy predominantly focussed on barriers and facilitators,^{21,24,25} these aspects were included in the questionnaire to obtain information on practice influences that could be compared across other studies. Table 2 outlines the questionnaire constructs with the key points extracted from their definitions, and the studies from which the information was obtained.

[Place Table 2 here]

A table of specifications was developed by listing each construct (KAP and influences) with all related key points on the vertical axis and applicable themes related to OBP on the horizontal axis. Each cell was then summarised by a draft question/statement that linked with an aspect of the construct (on the vertical axis) with the theme (on the horizontal axis). Statement wording was additionally informed through personal and professional experience, until saturation was reached.¹⁸ Survey items were then generated from the items listed in the table of specifications.

2.9.2 Step 2: Item wording

Each item addressed a single construct, and was worded in a neutral, understandable tone.¹⁸ Similar items for each construct were reworded either positively or negatively to reduce bias stemming from participants answering in a particular pattern,³¹ and to improve internal consistency. We attempted to keep the wording and formatting simple and understandable to prevent misinterpretation and potential measurement error.³²

Items were based on reflections of occurrences within the last month to prevent respondents from being unduly influenced by incidents that may not have reflected their usual practice. Similar items were worded in a positive and negative manner to assess the consistency of responses³³. This mechanism enhances internal consistency as closely worded items can yield a higher inter-item correlation.³⁴

2.9.3 Step 3: Responses

Five-point Likert scales (ranging from strongly disagree to strongly agree) were chosen to rate most items (n=48) as these provide an “ambivalent” midpoint and are sensitive and reliable.^{35,36} Five-point scales also have a familiarity factor contributing to ease of completion. Four-point scales with time-based responses (always, often/mostly, sometimes/rarely, never) were applied to the eight questions in the practice habits section as items referred to frequency of habits related to OBP. Open-ended questions were included at the end of each survey section, to capture other comments that had not been addressed in the scaled questions.

2.9.4 Step 4: Psychometric property testing

1. *Preliminary discussions* : Two authors (IV, HB) discussed the item list and identified redundant items for removal.
2. *Validation approach* : Prompts based on Patrick et al.³⁷, Burton and Mazerolle³⁴ and Heale and Twycross³⁸ were developed to seek input on the draft instrument questions from the expert and peer panels (see Table 3). The intent of these questions was to seek input from these participants on phrasing, appropriateness of the questions, flow of the survey, layout, sequencing and timing, intended meanings of items to assess whether responses agreed with opinions and nuances in the understanding of terminology and concepts.³³

[Place Table 3 here]

1. *Dissemination* : The expert panel members were emailed a cover letter, a link to the survey set up on GoogleForms, and a Microsoft Word document containing the questions in Table 3, set up in table format, hereafter referred to as the “feedback document”. An additional opportunity for comment on each item was provided. The peer members completed the draft questionnaire independently in the presence of the first author. This was timed to provide information on clinical utility.
2. *Cognitive interviews* : After completing the questionnaire, the peers were individually interviewed by the first author, using the questions in Table 3 as prompts and using concurrent verbal probing.³⁹ Cognitive interviews^{34,37,39} are a method of verifying written feedback on phrasing, appropriateness of the questions and flow of the survey.
3. *Data collection* : The experts in the validation group returned the Microsoft Word feedback document by email to the principal author (IV) with their feedback addressing each question in Table 3, for each item in the draft survey instrument. These responses were aggregated, with the peer responses, into a master document in which respondents were not able to be identified by the second author (HB).
4. *Researcher oversight* : The collated responses were discussed by IV and HB, to determine actions for each item. Items for which the validation group was in complete agreement were accepted “as is”. Items

with suggestions for changes to wording were modified where the change made sense. These changes were made irrespective of the number of people who suggested them. Redundant items were identified and removed to reduce the likelihood of non-response due to respondent burden.^{23,40} Suggestions for changes in formatting within the survey instrument were considered, and decisions were made based on the capabilities of GoogleForms, and respondent burden with regards to length of questionnaire and ease of use.

2.9.4.1 Outcome

Feedback obtained from the experts and peers was incorporated into the English-language questionnaire to include only the most representative items, and this version was finalised.

2.9.5 Step 5: Translation into Afrikaans

As English and Afrikaans are the only mediums of instruction for occupational therapy university education across South Africa, potential participants would be expected to be competent in at least one of these languages, and thus familiar with the terms and concepts used. The questionnaire was therefore translated into Afrikaans to ensure that the occupational therapy respondents would not be discriminated against by written language. The following steps were taken:

1. The first author (bilingual in these languages) completed the initial translation from English to Afrikaans.
2. The initial translation was checked for grammatical errors by two independent Afrikaans-first-language peers identified by the first author. Where errors were identified, corrections were made.
3. One expert in the validation phase of the survey, an Afrikaans-first-language speaker, who was already familiar with the English version was requested to comment on the Afrikaans version. Further grammatical and terminological corrections were made to produce the final Afrikaans version of the survey.

3 RESULTS

3.1 Expert and peer validation groups

Four participants were recruited and all participated (two experts, two peers).

3.2 Item retention

There were 85 items in the initial draft of the questionnaire, of which three items were removed at the preliminary discussion step between two of the authors (IV and HB). Thus 82 items were tested in the validation steps, and 79 items were retained. The redundant items were identified as being too similar to other questions, unclear, or not measuring the construct within which it was placed.

3.3 Modifications to the remaining items

Considering the feedback from the experts and peers:

- There was a request to add an option for an open-ended response after every question. However, GoogleForms does not provide for two methods of response options, i.e. multiple choice and an open-ended answer per item. Adding comment options would thus have required adding another item for each question, which would have doubled the length of the survey and risked non-response or premature abandonment. It was therefore decided that one open-ended comment after each section was sufficient.
- A recommendation to add definitions for the concepts “occupation as a means” and “occupation as an end” was received with the rationale that the older generation of therapists may have been unfamiliar with the terms.
- The practice setting list of options was amended to include specialised rehabilitation settings.
- An item was included for respondents to add assessments to obtain an occupational profile of the patient.

- Question wording for item 75, “Using occupation in treatment makes me stand out from other professionals”, was changed to “... makes my therapy unique/distinct from other professionals” to ensure the neutrality of the sentence.
- Grammatical corrections, adding examples to improve clarity, changing the order of questions to group similar questions together and changes to response formats (including drop-down menus/changing wording) enhanced the questionnaire.
- Wording was changed from “intervention” to “practice” to encompass the whole occupational therapy process.

3.4 Final questionnaire

The final questionnaire consists of 63 KAP items and 16 demographic questions (a total of 79 items). The instrument is outlined in Table 4 and the full survey (English and Afrikaans versions) is available from the first author on request. Based on the suggested changes made throughout the validation process, both expert and peer groups agreed that the items had face and content validity.

[Place Table 4 here]

4 DISCUSSION

This paper reports, to the best of our knowledge, the first valid survey on KAP in occupation-based hand therapy, for hand therapists. We believe that the sound psychometric properties of this survey offer promise for future research and interventions in this area.

The methodology used to develop and validate this survey was rigorous, iterative and used well-defined stages and processes to create the initial item list, identify appropriate experts and peers to review the instrument, consider it in terms of validity, utility and respondent burden, make subsequent modifications to ensure optimum impact, and then translate and verify it in Afrikaans.

Ensuring that South African hand therapists are competent and embrace evidence-based practice is an essential element of professional quality⁵. Evidence-based practice shows that OBP has proven benefits in the treatment of a hand-related condition^{3,21,25,41,42,43,44}. The survey can thus be used as a tool to plot practice trends to identify areas where occupational therapists treating hand-related conditions can incorporate OBP. This questionnaire should be of interest to South African hand therapy educators delivering undergraduate and postgraduate programmes as a tool to identify knowledge and attitudes towards OBP to inform educational endeavours to promote the use of OBP. This questionnaire may also be relevant for hand therapy educators internationally as the initial items were derived from international literature, and no local contextual issues were raised during the validation process. Moreover, the questionnaire items lend themselves to adaptation to other fields of practice, as KAP is a universal concern.

There are potential limitations in the process undertaken for questionnaire development and its validation:

- The questionnaire items were identified from a comprehensive literature search, however, as with all searches, there is the possibility that important information was overlooked and relevant items were not included. Furthermore, as accurate records were not kept of the search process, there is no evidence that all relevant literature was captured. However, as none of the validation group identified new items, we believe that the item list is comprehensive.
- Bias may have been introduced by the purposive sampling of experts and peers in the validation group. All participants were of the same race, and from relatively similar backgrounds. They therefore may not have brought important knowledge about culture and race to the discussions, in ways that may have provided a different lens to capture information on KAP in occupation-based hand therapy in South Africa. This was partially unavoidable due to the limited pool of occupational therapy academics with expertise in the field of hand therapy in South Africa. The peer group could however have been more diverse and larger; this is a serious limitation that should be addressed in further validation studies of this instrument.

A pilot study was not conducted, to test for utility, to determine whether there were further redundant items, or to consider issues of intra-rater reliability over time. KAP contains attributes that may change between two test periods, depending on participant exposure to learning opportunities in the interim period.¹⁸ The decision not to conduct a pilot study was made because the sample of hand therapists in South Africa is relatively small, and the intention of the eventual application of this questionnaire was to capture KAP nationally. Conducting a pilot study would thus have reduced the available pool of respondents for a larger national survey. The questionnaire development and validation process could thus be criticised as no information on its wider application exists.

5 CONCLUSION

This paper presents the process of developing the first evidence-based validated questionnaire designed to capture KAP in occupation-based hand therapy. Whilst it was developed in South Africa, and is therefore relevant to South African contexts, it could have international applicability for occupational hand therapy, and could also be applied to other types of occupational therapy practice. Future testing would be required to test its applicability and comprehensiveness, in other settings.

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CONFLICT OF INTEREST

Authors declare no conflict of interest.

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