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KEYWORDS:

assistive devices, activities of daily living, Bobath, recyclable and low-cost material, unconventional resources, online asynchronous focus groups

ARTICLE HISTORY:

Received: February 2022

Reviewed: April 2022

Revised: July 2022

Accepted: September 2022

Published: April 2023

EDITOR:

Hester van Biljon

<https://orcid.org/0000-0003-4433-6457>**DATA AVAILABILITY:**

Upon reasonable request from the corresponding author

FUNDING:

No funding was obtained to conduct this research

HOW TO CITE THIS ARTICLE:van Niekerk K, da Silva SR, Swart C, Hugo M, Flatela ZP, Janse van Vuuren A. Physical activity resource needs of occupational therapists in primary public health care in Gauteng, South Africa. *South African Journal of Occupational Therapy*. Vol 53 No 1. April 2023. DOI: <https://doi.org/10.17159/2310-3833/2023/vol53n1a6>

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ISSN On-line 2310-3833

Physical activity resource needs of occupational therapists in primary public health care in Gauteng, South Africa

ABSTRACT

Introduction: Resource constraints in primary health care settings in South Africa give rise to challenges for occupational therapists. This study aimed to determine the physical activity resource needs (including objects used and space demands) of occupational therapists in the primary health care context of Gauteng, South Africa.

Method: A qualitative, descriptive research design was used. The participants were occupational therapists working in primary health care settings in Gauteng. Convenience and snowball sampling were used. Data were collected through two online asynchronous focus groups, conducted over three days each. Thematic analysis was used to analyse the data.

Findings: Findings included the resource constraints experienced by occupational therapists and how the occupational therapists' adaptability helped them overcome these constraints. Space, resources for basic and instrumental activities of daily living, assistive devices, Bobath plinths and recyclable and low-cost materials were identified as being particularly useful physical activity resource needs.

Conclusion: Although limited physical activity resources were available in the settings, therapists' skills in adaptability proved useful in using unconventional resources instead. This study's results identify physical resources deemed as most useful to provide occupational therapy services in primary health care. Furthermore, the results provide information to the education faculty in order to adapt the undergraduate curriculum to better prepare occupational therapy students for practice in primary health care.

Implications for practice

- The findings can be communicated to management of primary health care facilities in order to procure or advocate for the procurement of resources deemed as essential in primary health care practice contexts.
- Innovation, problem-solving and adaptability can be valuable characteristics used in professional reasoning that may enable occupational therapists to overcome physical resource barriers.
- Faculty at tertiary educational institutions may utilise the findings in order to adapt curriculums to better prepare occupational therapists for work in the South African primary health care context.
- Occupational therapy students should gain experience in developing and adapting activities using recyclable and reusable materials for diverse clients, including children and adults.

INTRODUCTION AND LITERATURE REVIEW

The World Health Organisation states that *Primary health care (PHC) facilities are an essential part of health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and citizens afford to maintain*^{1 p.42}. In South Africa, the majority of the population has access to and makes use of public PHC facilities². Rehabilitation services are provided in PHC as part of the continuum of care as set out by the National Department of

Table 1: Types of physical activity resources and examples (Adapted from Table 11 in the OTPF10)

Type of physical activity resource	Examples
Objects used: Tools, supplies, equipment, resources required in the process of carrying out the activity or occupation.	Scissors, shoes, paint, workbench, stove, money, transportation.
Space demands: Physical environment requirements of the occupation or activity.	Size, arrangement, surface, lighting, temperature, humidity, noise, ventilation.

Health³. This is aligned to the recommendations in the World Health Organization’s *Rehabilitation 2030: a call for action*⁴.

South Africa is a resource-constrained context, where the rehabilitation workforce is stretched to provide services to the large population requiring their services^{5,6}. Historically, rehabilitation services have not been a priority in the South African health system, with higher emphasis placed on medical and curative approaches^{5,7}. This has contributed to limited resources available for rehabilitation services with therapists reporting limited budget allocation and difficulties in procurement⁷.

Occupational therapists work in PHC facilities alongside other members of the rehabilitation team⁸. Occupational therapists use activities during therapy and select these activities through professional reasoning⁹. The fourth edition of the Occupational Therapy Practice Framework (OTPF) explains that during professional reasoning, occupational therapists have to consider the activity demands of the activities they want to use¹⁰. Activity demands are what is commonly required in order to perform an activity or occupation. Among the many factors included in the activity demands are the objects used, as well as the space demands. The aforementioned objects include tools, supplies, equipment and resources used to carry out the activity¹⁰. In this study, these objects as well as the space demands are referred to as physical activity resources. Table 11 in the OTPF was used as a framework for this study as it encapsulates the relevance and importance of physical activity resources in occupational therapy intervention and describes how the absence of physical activity resources creates a barrier for occupational participation¹⁰. Table 1 (above) illustrates an adapted version of Table 11 of the OTPF.

The OTPF additionally explains that occupational therapists consider the activity demands during their professional reasoning and that these activity demands can potentially act as a barrier to participation in activities and occupations¹⁰. Physical activity resources are integral to the planning and execution of interventions - the availability of physical activity resources essentially govern which activities can be used.

Schell’s Ecological Model of Professional Reasoning⁹ encapsulates the factors that an occupational therapist considers during professional reasoning. Some of the factors that are considered during professional reasoning and activity selection are payment options, working space and the equipment and resources available. Several studies have shown how these factors may pose challenges in South African PHC settings^{2,5}, similar to how the OTPF describes how activity demands, which are also considered during professional reasoning, may act as a barrier¹⁰.

The availability of resources is one of the most influential factors on rehabilitation services in the rural environment¹¹. In a study done by van Stormbroek and Buchanan¹² on the practice of occupational therapists in rural health contexts, participants reported that limited resources prevented the occupational therapists from developing a professional identity. Participants felt they had to treat performance components in the same way physiotherapists do, instead of treating performance within occupations^{1,2}. Additional challenges faced by occupational therapists in resource-constrained contexts (as noted by Toal-Sullivan¹³) include managing the load of patient responsibilities and struggling with professional reasoning.

In South Africa, newly qualified occupational therapists are typically placed in PHC settings in their first year of practice in order to complete their compulsory community service year¹⁴. It was reported by a therapist doing community service in rural Eastern Cape, South Africa, that many of the occupational therapy departments in PHC do not have allocated budgets¹⁴. Other participants in the same study reported using their own money as soon as the recyclable materials, out of which they made their own physical activity resources, were exhausted¹⁴. With regards to financial resources, De Beer et al. state that the absence of financial resources can lead occupational therapists to feel inadequate or frustrated as they cannot provide the service they want to provide, that can contribute to burn out¹⁵.

Literature thus illustrates how the scarcity of objects such as tools, supplies, equipment, and resources, as described by the OTPF, may act as a barrier during professional reasoning as it limits the possible activities and services that can be provided and may therefore limit the ability of occupational therapists to navigate PHC contexts in South Africa¹⁰. This is of particular concern as inexperienced community service therapists often have to navigate these challenging resource-constrained contexts.

Although several studies report on the scarcity of resources for occupational therapy services in PHC, it is not clear exactly what physical activity resources occupational therapists use and what they feel is necessary to provide effective rehabilitation services in PHC^{12,14}. As this information is not available, it may be more difficult to advocate for additional resources to use in these contexts. Therefore, the aim of this study was to determine the physical activity resource needs of occupational therapists in the PHC context in the Gauteng province of South Africa. To achieve the aim of the study, the researchers formulated two objectives: to explore which physical activity resources are currently used by occupational therapists in PHC in Gauteng; and to explore which physical

Table II: Demographic details of participants (n=8)

Demographics	Number of participants (n)	Percentage of sample
Highest level of qualification		
Bachelor's degree	n=8	100%
Years of experience in PHC		
1-3 years	n=5	62.5%
5-10 years	n=1	12.5%
More than 10 years	n=2	25%

Table III: Characteristics of the practice environment (n=8)

	Number of participants (n)	Percentage of sample
Mainly provides therapy in an urban or rural area		
Urban	n= 3	37.5%
Rural	n=2	25%
Both	n=3	37.5%
Mostly sees individual patients or groups		
Individual	n=3	37.5%
Group	n=1	12.5%
Both	n=4	50%
Do they have an allocated therapy room?		
Yes	n=5	62.5%
No	n=3	37.5%
Do they feel that they have enough space to provide therapy?		
Yes	n=3	37.5%
No	n=5	62.5%

activity resources occupational therapists deem necessary to provide adequate intervention in their specific context.

METHOD

Study Design

This study was conducted using a qualitative, descriptive research design, as described by Lambert and Lambert¹⁶. Data were collected during two asynchronized online focus groups.

Population and Sample Selection

The population for this study were occupational therapists practising in PHC settings, in the Gauteng province of South Africa, during the year 2021. The researchers were based in Gauteng and therefore familiar with the context. As the PHC setting in South Africa consists of clinics and district-level hospitals, the inclusion criteria for the study were occupational therapists that work in PHC clinics or hospitals in Gauteng.

Non-probability sampling methods, convenience and snowball sampling were used. In terms of time and financial resources available, these sampling methods were the most suitable for this research study^{17,18}. Participants were contacted through email via the alumni database of the University of Pretoria Occupational Therapy Department. Potential participants then passed the invitation on to colleagues who may meet the inclusion criteria, thereby employing snowball sampling. Occupational therapists that were interested to participate contacted the research team.

Five to eight participants are seen as the ideal number of participants to use for focus groups^{17,19}. Although eight participants were recruited for the first focus group, only four participated. Therefore, a second focus group was held with an additional four participants. Potential participants were contacted via email and snowball sampling was used again to reach more participants that met the inclusion criteria. Participants of all ages and with varied years of experience were included to increase the diversity of perspectives. Table II (above) illustrates the demographic information of the participants.

Table III (above) provides a summary of where and to whom services are provided by the participants.

Research Tools

Before data were collected, two experts reviewed the proposed focus group questions. The experts were both academics with expertise in the PHC context. The feedback provided by the experts was primarily related to the wording of the questions. The suggested feedback enabled the researchers to adapt the questions before the focus groups could commence. Table IV (page 47) illustrates the focus group questions.

Data collection procedures

Data were collected for this study by means of two asynchronized online focus groups, each presented over three days. Asynchronized focus groups (where participants do not all have to be online at the same time), were preferred over synchronized focus groups where participants all

Table IV: Online asynchronous focus group questions

Question number	Question
1	Ice breaker question - What is your favourite activity to do during your free time and why?
2	Tell us about the activities/occupations/tasks that you like to use during your therapy sessions, either at the clinic or in the community and why?
3	Considering the activities/occupations/tasks that you most often use during therapy, which physical activity resources do you use for these activities? Physical activity resources refer to the physical objects, materials, and tools that you use during therapy sessions.
4	What physical activity resources do you not have that you would like to have? This could include any physical activity resources that you believe will enable you to provide adequate therapy for your clients.
5	If the activity resources that you need are not readily available, due to financial constraints or limited available equipment, how do you go about overcoming this barrier?

meet online at the same time. Asynchronous groups were advantageous as it allowed the research participants time to reflect on the questions posted in written format by the facilitator before answering them, in writing. This provides opportunity for depth and accuracy in the presentation of their perspective^{20,21}. Furthermore, participants are also allowed the opportunity to respond to each other. The asynchronous groups could accommodate the research participants with limited time as they could respond to the questions and add to the discussion at any time that suited them best throughout the three days²². Additionally, by using an online focus group, the researchers could comply with the regulations imposed to curb the COVID-19 pandemic.

The focus groups were conducted via an online platform, Google Groups. Google groups provided a discussion platform where the focus groups could be hosted and where the data could be securely captured. Each participant was invited to the group through their email addresses. Access to the group forum was tested before the onset of the group to ensure that participants had access.

The focus groups were facilitated by the research supervisor. This was in alignment with the ethics committee requirement that the focus groups be facilitated by an experienced facilitator. On the first day, the participants were required to read the instructions of the focus group, complete a short questionnaire via a link contained within the instructions and answer an ice breaker question. The questionnaire included demographic questions, as well as questions pertaining to where and to whom services were provided, as reported in Table II and III. Additionally, on the first day, they received the first focus group question. Two focus group questions were posted on the second day followed by the final question that was posted on the third day. Participants responded to all questions in written format. The facilitator accessed the platform multiple times daily to ensure that optimal facilitation was provided throughout the discussion. Participants were encouraged to respond to each other's contributions in the focus group instructions as well as by the facilitator throughout the discussions.

Data Analysis

Thematic data analysis was used to analyse the data. The phases of thematic data analysis, as described by Braun and Clarke, were followed²³. Phase 1 required the researchers to familiarise themselves with the data. Transcripts were

obtained by copying the discussions from both online focus groups. ATLAS.ti software was used to assist with the organizing and coding of the data. Phase 2 consisted of generating initial codes. The coding was done by a group of two researchers on ATLAS.ti. The analysis was then discussed within the bigger group of six researchers and changes were incorporated based on consensus reached between the researchers. A framework for coding was created as the data emerged²⁴. Both focus groups produced similar codes, leading the researchers to believe that data saturation was reached.

During phase 3 the codes were collated and organised into themes and sub-themes. Thematic maps were used to illustrate how the codes were separated into themes and subthemes. This process was completed by two researchers that discussed the results with the bigger group. Phase 4 required the reviewing of the themes. The group of six researchers reviewed the themes and reached consensus on the identified themes and sub-themes. In phase 5 the identified themes were defined and named. The 6th and final phase consisted of producing the report.

Trustworthiness

The trustworthiness of the study was addressed by looking at four principles namely credibility, transferability, dependability and confirmability²⁵. Credibility was ensured during the data collection process by making sure that the researchers used peer debriefing continuously. The researchers also developed an increased sensitivity to the participants' experiences through prolonged engagement and persistent observation during the research process as suggested Novell et al²⁶. The research group of six communicated multiple times daily during data collection and met weekly during data analysis.

Dependability was promoted in that the researchers provided an in-depth description of the research process. The process was logical and clearly documented. This was done to familiarise readers with the process that was followed for them to make a judgement on the dependability of the study. To promote potential transferability, the researchers provided a clear and comprehensive description of the contexts of the participants in the research report as well as the findings. Therefore, readers can make their own judgement on the transferability of the study to their specific context.

Confirmability aims to ensure that the results obtained

Table V: Themes, sub-themes and examples of codes identified in the study

Themes	Definition of theme	Sub-themes	Examples of codes
Resource constraints	The barriers faced in PHC with regards to physical resources.	Contextual constraints	Environmental barriers Low socioeconomic status of the community Insufficient funds of clients Limits regarding multidisciplinary team
		Space constraints	Limited space / no allocated space
		No physical resources available	No resources Lack of maintenance of physical resources Limited resources influencing activity choice
Current resources used	The ways in which occupational therapists in PHC overcome the problem of limited physical resources.	Strategies used by occupational therapists in resource constrained environments	Advocating for resources Borrowed resources Use of own body Transporting resources
		Alternative sources of resources	Low-cost materials Low-cost toys Recyclable materials Client resources Donations Other clinic's resources
		Maximizing effectiveness of therapy within resource- constrained environments	Education & training Groups Home programme Multipurpose resources
		Overcoming space constraints	Home visits
		Utilizing human resources	Using personal resources Using the client's own body Utilizing Community Health Workers
Most useful physical activity resources	The physical activity resources identified as most useful in the rendering of occupational therapy services.	Required resources	Activities of daily living resources Assistive devices Plinth Sufficient space Craft activity resources Kitchen activity resources Low-cost materials Pillows Recyclable materials Rollers/wedges Splinting Standing frame Therapy mat Environmental resources

could be confirmed by others²⁶. This was facilitated by making use of reflexivity. The regular communication between all members of the research group and weekly group meetings enabled the researchers to reflect on their role in the research.

Ethics

Ethics approval (number 800/2020) was obtained from the Research Ethics Committee at the University of Pretoria which complies with ICH-GCP guidelines and has US Federal wide assurance. The fundamental ethical principles used in this study were: respect for persons, beneficence and justice²⁷. The participants had the right to autonomy, through informed consent and voluntary participation. It was ensured that the participants were aware of their right to withdraw at any time during the study without negative consequences. All data collected during the focus group remained confidential and any identifying information was omitted during the process of data analysis.

FINDINGS

Three themes emerged during the process of data analysis. Table V (above) provides the definition of each of the themes, the subthemes and examples of codes included under each theme.

Theme one precedes the findings for the research objectives. To explore the resource needs of occupational therapists in PHC settings in Gauteng, it is important to first understand the resource constrained contexts of the participants.

Theme 1: Resource constraints

The first theme that emerged was resource constraints experienced in PHC workplaces. Several participants asserted that they had few physical resources and limited space available in their PHC setting, often compromising the extent of the services that they were able to render. The lack of physical activity resources acted as a barrier to occupational therapy services.

"This lack of space and limited equipment often prevented us from providing the best intervention we could to each client we saw" **(P6, an occupational therapist working in urban and rural environments with less than three years of experience).**

"I want to mention that we outreach to another clinic ..., where we have nothing, and our rehab team (physio, OT, social worker, and STA) share one consultation room. At our 'main' clinic and outreach clinic space is really making it difficult to render services. ... It is also difficult to take all our equipment to our outreach clinic, so often we do not have anything to use" **(P5, an occupational therapist with less than three years of experience, working in a rural setting).**

Limited space as a resource constraint seemed to be the most problematic barrier faced by the participants in their PHC settings.

"A big problem within most of the clinics where I worked was space. Often, we were pushed into small offices and there was no equipment available" **(P6)**

Theme 2: Current resources and strategies used

The second theme that was identified highlighted the ways in which occupational therapists make adaptations to therapy in order to reach the same goal despite resource constraints. The findings show that there are many different sources of physical activity resources that occupational therapists use when activity resources are not available at the facility where they are employed. Two participants describe having to borrow or share resources from nearby clinics as well as having to transport resources such as wheelchairs when travelling between clinics.

"We are coping with what we have, but if the other clinic takes back the equipment, we will need similar equipment for muscle strength and ROM exercise" **(P5)**

"... we had to travel with equipment and often up to 5 wheelchairs in a car to ensure that we could provide intervention to our clients" **(P6)**

Due to the limited space, many therapists either did therapy outside or preferred to do home visits instead. Participant 4 (an occupational therapist working in urban and rural areas with more than 10 years of experience) said:

"We have limited space in all the clinics that I service. This contributes a lot to the choice of activities that I use for groups. We do our activities outdoors because there is no space indoors".

"I do home visits to compromise for lack in space" **(P5, a participant that has to share the therapy room she has access to with other professionals)**

Participant 8 (with less than three years of experience) faced

the same problem:

"... if anything I think my greatest challenge is the lack of enough space. I could always hold some parts of sessions outside".

Due to resource constraints, some therapists have to get creative by using environmental resources such as sand or stones. Participant 1 (with more than 10 years of experience working in an urban environment) said:

"I have to add, that being based in the community, I often have to use everyday objects for therapy. I've used rice grains, pasta, pegs, beans, wool, cotton wool and also flour from home. Even sand".

The other noise makers we and students have made, using toilet rolls filled with stones, sand, rice, etc. (P2, an occupational therapist with between 5 and 10 years of experience, working in urban and rural contexts)

"... bottles filled with sand for weight, balls sometimes we use old clothes to make one". **(P4)**

Within this theme the adaptability and innovativeness – particularly of more experienced participants – became evident. The participants described using recyclable and low-cost materials as physical activity resources.

"I use low cost recycled materials, such as the bottle caps, tins, toilet rolls, take away containers, etc. I have also used cut off pieces of sponge (leftover from the Buggy seatings) to do stacking activities, sorting them according to shape, size and colour. The toilet rolls are so versatile! I use them to make shakers, 'binoculars' for visual acuity, rolling them to one another, I cut them into smaller circles that can be used for threading necklaces... I have also used them as stamps by dipping the edges into paint and then stamp circles onto paper" **(P2)**

"So, I use stacking cups, wooden blocks, plastic bottle caps in various colours, plastic buckets for sorting, large, coloured beads, matching games and cards, scrap paper and crayons, and threading shapes and shoelaces" **(P1)**

Participant 2 took further initiative by organizing a fundraiser with her students:

"We received a donation of soft toys a few years back, which another group of students, as part of their project, sold to do fundraising for needed resources. With the funds they bought blocks, noise makers, small flashlights, ingredients to make homemade playdough with, rice, beans, bean bags, and cellophane".

Many participants have relied on donations from organizations and fellow colleagues.

"I am also fortunate to have access to ..., which provides

resources to therapists in need if it helps in any way with patient services or therapy". **(P3, an occupational therapist with less than three years of experience, working in the urban environment)**

"I also was aware of getting access to free/scrap materials in the hospital and my own community and encouraged other colleagues to bring second hand items which they weren't using, such as an old baggy t-shirt for dressing activities" **(P7, an occupational therapist with less than three years of experience working in a rural context)**

Other therapists asked patients to bring their own equipment and materials to use during therapy.

"For the ADL activities I will ask everyone to bring shoes with laces, a shirt with buttons, etc." **(P2)**

"I also took my own equipment such as blocks and cars as this was not available at the clinics. I learned that it is important to be adaptable and context specific within therapy therefore I also asked caregivers to bring the toys they have available at home." **(P6)**

Theme 3: Most useful physical activity resources

The third theme created was the physical activity resources identified as most useful in the rendering of occupational therapy services. Certain objects, equipment, tools and resources seemed to stand out amongst others, either for being very useful and often utilized in the participants' context or for creating a strong barrier in the absence of the object or resource.

Naturally, the absence of space proved to be the barrier most often faced by the participants as described in theme one.

"I must first have space and then the rest will follow **(P4, occupational therapist working in urban and rural areas without access to an occupational therapy treatment room)**, implying that space forms the foundation for the rendering of occupational therapy services".

Furthermore, many participants mentioned that they desire to have more resources that are used in rehabilitation for clients who face difficulties within their basic and instrumental activities of daily living.

"Tools and equipment ... to be able to engage in occupation [sic] such as BADL and IADL like cooking, activities to be used for leisure ..." **(P5)**

"I would have liked ... more ADL tools, such as clothes, kitchen equipment, etc. as most of the kitchen equipment were [sic] missing or broken" **(P6)**

Assistive devices and Bobath plinths were often mentioned by the participants. Assistive devices were either often used by the participants or solutions had to be found to compensate for the absence of these assistive devices.

"For example, I often used rolled-up bed sheets or blankets for positioning or educated families on what they could make or buy at home" **(P7)**

"... we had to travel with equipment and often up to 5 wheelchairs in a car to ensure that we could provide intervention to our clients" **(P6)**

"I use the physio mats and physio balls, rollers and wedges during our developmental delay group ... I use the paediatric standing frame as well, especially when the physio and I have joint sessions. This works extremely well to reach our objectives together" **(P2)**

"I often made use of a Bobath plinth, ... and wheelchairs or walking frames ..." **(P6)**

"I also very often make use of the therapy mats and Physio ball for gross motor activities" **(P2)**

The physical activity resources that were most often discussed were recyclable and low-cost materials. It is exactly these resources that are creatively utilized by occupational therapists when typical resources are not available.

"I use the bottle caps to do sorting activities - size and colour sorting. The tins I use for stacking, as well as using them to sort the caps into. ... I also bring things from home sometimes but try to recycle/upcycle 'trash' to make low cost toys with. I also brought a bunch of old magazines to the clinic to use during therapy" **(P2)**

"I make use of ... different coloured plastic bottles with matching rings, ... chalk to draw a tandem line (for dynamic balance)" **(P8)**

These recyclable and reusable items are found to be distinctly valuable in the under-resourced practice contexts in which the participants render therapy.

DISCUSSION

Firstly, the findings suggest that the PHC practice contexts where the participants are employed are under-resourced. This supports previous studies where participants have highlighted the limited physical resources they have available to provide rehabilitation services in PHC^{12,14}. The available space as well as the objects, tools and materials needed are important considerations in the activity selection and professional reasoning process⁹. Therefore, limited access to space and other physical activity resources will invariably influence the intervention provided by therapists.

Not surprisingly, several participants in this study experienced the limited availability of physical resources as a barrier to their service provision in PHC. Inexperienced therapists have been described to experience the influence of aspects pertaining to the environment (such as available resources) as more influential on their practice than more experienced therapists²⁸. Experienced thera-

pists are said to view environmental factors not so much as barriers, but rather as merely among the many factors to be considered in the professional reasoning process²⁹. As most participants in this study were relatively inexperienced, this may – at least in part – have contributed to the experience that resource constraints were such a barrier. This insight is important for managers to keep in mind when supervising and managing inexperienced professionals (that often work in PHC) to guide them to develop the ability to recognise the opportunities and strengths within the resource constrained PHC context.

Aspects pertaining to the resource limitations as reported in Theme 1 enable the reader to understand the context in which the participants work. Reporting on the context is important in order to increase the potential transferability of the findings to other contexts. Therefore Theme 1 essentially precludes the objectives of this study that aimed to identify the resources and strategies that occupational therapists in PHC utilise and those physical activity resources they deem to be most important to ensure effective services can be provided.

Several authors^{5,7,12,14} have called for adequate resources for rehabilitation. It is hoped that the findings reported in Themes 2 and 3 will assist managers to advocate for additional resources for occupational therapy services in PHC.

Theme two indicates the resources and strategies that occupational therapists in PHC currently use. This theme answers objective 1 of this study (current resources used). The resources consist of a combination of typical occupational therapy resources and unconventional resources used to compensate for limited resources. Invariably linked to the resources used at the time of this study are the strategies occupational therapists utilise to adapt to the limited resources in their practice context. Contexts with limited resources appear to create opportunities for creativity and resourcefulness. The adaptability and resourcefulness of therapists have also been reported by van Niekerk⁶.

The use of recyclable materials was highlighted as an important resource. The use of recyclables aligns with sustainable and environmentally responsible practice³⁰. By linking with established community recycling projects or developing such projects can provide occupational therapists with the required recyclable resources for their practice and support participants in the recycling projects.

Importantly, students should be trained to provide services in resource constrained environments during their studies. Lorenzo et al. reported that there is a misalignment between undergraduate training and the demands of PHC contexts³¹. This corresponds with van Stormbroek and Buchanan's research in which a participant stated that they felt that most of the training they received during undergraduate studies was difficult to apply in a resource-constrained environment¹⁴. Training undergraduate students to be adaptable and resourceful may better enable inexperienced community service therapists to cope with the challenges posed by the PHC context.

The second objective was to explore which physical activity resources occupational therapists deem necessary

in order to provide adequate intervention in their specific context. This objective is primarily answered by Theme 3. However, without the availability of the resources mentioned in theme 2, the possibility of rendering adequate intervention in resource-constrained contexts would be substantially limited. These resources, first and foremost, include space, basic and instrumental activities of daily living resources, assistive devices, plinths, recyclable and low-cost materials. These resources cannot be compensated for, as they have been identified as either most useful within occupational therapy intervention or are used by occupational therapists to overcome resource barriers.

Limitations

The study had a limited sample size. There are few PHC clinics in Gauteng and many of these facilities do not employ occupational therapists. A second focus group was conducted due to the attrition in the first focus group. The target population was sampled as planned, but the findings of this study cannot be generalised and do not reflect the situation in any of the other 8 provinces in South Africa. Additional limitations included that participants were difficult to recruit and had limited time available to participate in the study.

CONCLUSION

The consideration of physical activity resource demands during professional reasoning is an integral part of planning intervention. In the absence of physical activity resources such as objects and space, occupational therapists may experience various barriers related to their professional identity and self-esteem¹⁵. It is evident that the PHC context is under-resourced compelling occupational therapists to use unconventional resources to overcome contextual barriers. Certain physical activity resources have been identified to be particularly useful in occupational therapy intervention in PHC.

This study is relevant to the clinical practice of occupational therapy in that it contributes to the body of knowledge regarding the physical activity resource needs of occupational therapists in PHC. The research may contribute to the preparation of newly qualified occupational therapists for the PHC context. It further creates a base of knowledge from which future studies can be conducted regarding what occupational therapists regard as essential resources in PHC as well as studies on how available funds can be maximised.

Acknowledgement

The authors would like to extend our sincerest gratitude to all the participants for their insightful, valuable and in-depth contributions made towards this study.

Authors' contributions

Karin van Niekerk was the supervisor of the study and conceptualised the study. She guided design of the study, performed the data collection, and assisted with data analysis and interpretation and edited the manuscript. Sabrina Raquel da Silva, Clarette Swart, Marnique Hugo, Zolani Phiwokuhle Flatela, and Ansa Janse van Vuuren

were investigators in this study and were responsible for the study design, sourcing relevant literature, recruiting participants, analysing the data and interpretation of the results. They were primarily responsible for drafting of the manuscript.

Conflicts of interest and bias declaration

The researchers declare no conflicts of interest. The views expressed in the article are the authors' own and not an official position of the relevant institution.

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adaptiveness, occupational engagement, COVID-19 pandemic and lockdown, occupational disruption, state of well-being, older adults,

ARTICLE HISTORY:

Received: March 2022

Peer review: July 2022

Revised: August 2022

Accepted: September 2022

Published: April 2023

EDITOR:

Janine van der Linde

<https://orcid.org/0000-0003-1067-9494>**DATA AVAILABILITY:**

Upon reasonable request from the corresponding author.

FUNDING:

The authors would like to thank the University of the Western Cape for funding the study.

HOW TO CITE THIS ARTICLE:

de Vries A, Mthembu, TG, Wegner, L. Older adults' adaptiveness to disruptions during South Africa's COVID-19 lockdown: Keep your head up and continue breathing. South African Journal of Occupational Therapy. Vol 53 No1, April 2023.

DOI: <https://doi.org/10.17159/2310-3833/2023/vol53n1a7>

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ISSN On-line 2310-3833

Older adults' adaptiveness to disruptions during South Africa's COVID-19 lockdown: Keep your head up and continue breathing

ABSTRACT**Introduction:** Adaptiveness fosters resilience through increasing capacity to transcend barriers in individuals, their environment and occupational engagement. The COVID-19 pandemic and lockdown may have decreased adaptiveness in older adults by disrupting occupational engagement, thus negatively influencing health and well-being.**Methods:** A qualitative, meta-analytic design was used to explore the adaptiveness of older adults to disruptions experienced during South Africa's COVID-19 lockdown. Four student researchers' primary studies were reviewed and findings synthesised for this paper. Individual, semi-structured interviews were conducted with 16 participants during April and May 2020. The transcripts were analysed thematically and reported in the primary studies. The authors conducted thematic analysis across all four primary studies to develop themes for this paper.**Findings:** Three dominant themes emerged: (1) COVID-19 as an illness, (2) occupational disruptions experienced by older adults, and (3) developing a state of adaptiveness. Older adults developed adaptiveness through changing perspective, adapting to new environments, learning to use technology, expanding roles and routines, and strengthening the spiritual self through engagement in eudemonic occupations.**Conclusions:** The study provides insights into challenges and adaptiveness of older adults during the COVID-19 lockdown. Findings inform interventions with older adults presenting with reduced adaptiveness.**Implications for practice**

This study is valuable as it provides occupational therapists with a deeper understanding of older adults' experiences and challenges during the COVID-19 lockdown, thus, laying the potential for strengthening client-therapist interpersonal relationships. Although the sample observed in this study was older adults, the findings can be considered among other vulnerable clients such as individuals with disease, illness and/or disability. Additionally, these findings may provide occupational therapists with insights that can assist in framing intervention strategies for clients with a decreased state of adaptiveness. This is significant as adaptation requires reasonable social, emotional, and cognitive processes. Lastly, this study aimed to contribute to a wealth of research exploring adaptiveness, rooted in the reality that change is inexorable; however, how we respond to change can be transformative for individual and population well-being.

INTRODUCTION

At the core of the human experience is an overwhelming desire to be engaged in meaningful and purposeful occupations, and this is integrated with the process of striving for, and achieving, mastery in said occupations. Schultz and Schkade¹ described this internal primitive process as occupational adaptation. Adaptiveness is a life-long dynamic process that fosters resilience through an individual's capacity to transcend barriers presenting in personal factors pertaining to the person, their environment and occupational engagement^{2,3,4}. An increased state of adaptiveness empowers persons to engage in diverse and meaningful occupations, which in turn has the potential to promote a holistic state of well-being^{2,3,5,6}. The advent of the COVID-19 pandemic and consequent restrictions resulting in lockdowns in South Africa may have decreased levels of adaptiveness in more vulnerable populations, such as older adults, who were identified as a higher risk population for the development of moderate-severe COVID-19 complications with a higher mortality incidence. O'Leary⁷ and Cloete⁸ have noted significant disruptions in roles and routines due to COVID-19 restrictions. The top-down implementation of the lockdown restrictions may have furthered a decreased state of adaptiveness through the removal of individual autonomy, free-will, occupational choice and power, thus, highlighting a potential social justice crisis on top of a health crisis.

Previous studies such as those by Blacker⁴, Lexell⁵, Cahill⁶ and Johansson⁹ have examined adaptiveness in the context of population vulnerability, illness, and disability. However, limited research has explored the adaptiveness of persons within the context of a pandemic or lockdown. Moreover, research is further restricted when investigating one of the most vulnerable populations to the causation of the pandemic, such as older adults, in South Africa. This is noteworthy when considering that South Africa is a developing country with a complex set of challenges suspended in a precarious narrative of inequality. The question that arises is how did older adults adapt to the disruptions of the COVID-19 lockdown in South Africa during 2020?

Literature review

COVID-19 in South Africa

In December 2019, a novel, acute respiratory syndrome SARS-CoV-2 appeared in Wuhan, China¹⁰. SARS-CoV-2 or COVID-19 presents with myriad flu-like symptomatology including fever, malaise, dry cough and dyspnea¹¹. This presentation is characteristic of numerous viral conditions such as pneumonia, the common flu/cold and seasonal allergies. This made it challenging initially to distinguish COVID-19 from other viral conditions, causing the virus to spread rapidly on a global scale. On 30 January 2020, COVID-19 was flagged as a public health emergency of international concern by the World Health Organisation¹². On 5 March 2020, South Africa's former minister of Health, Dr Zweli Mkhize confirmed the arrival and spread of COVID-19 in the country. The South African population met the news with great

concern, angst, hysteria, fear and frustration¹³. This response was not unfounded when considering that COVID-19 was a novel virus with limited evidence surrounding transmission and clinical management. Moreover, South Africa is a developing country with a weakened healthcare system and a significant immunocompromised population owing to a high prevalence of HIV/AIDS, tuberculosis, malnutrition, and lifestyle diseases¹⁴. As findings related to COVID-19 emerged, it was established that the risk for COVID-related severe illness and death increases with age due to possible changes in lung anatomy and muscular atrophy which results in physiological dysfunction, reduction of lung reserve, reduction of airway clearance, and reduction of the defence barrier function^{14,15}. Older adults' risk was exponentially increased through the prevalence of comorbidities such as hypertension, diabetes mellitus, obesity, chronic obstructive pulmonary disease or any other respiratory illness^{16,17}. The Centers for Disease Control and Prevention¹⁸ further stated that persons from racial or ethnic minorities are at risk of developing moderate-severe COVID-19 complications, or even dying, because of where they work and/or live as well as poor health service accessibility.

The implications of the COVID-19 lockdown on South Africans

To safeguard vulnerable populations such as older adults, the South African government followed international trends and declared a National State of Disaster. South Africa was placed on lockdown alert level 5 effective from 26 March 2020 in an attempt to flatten the first wave of COVID-19 infections. The lockdown highlighted disparities amongst South Africans when considering the argument of equality versus equity as a determinant of privilege¹⁹. Amongst individuals in a higher-middle socioeconomic bracket, lockdown restrictions were well adhered to²⁰. People were able to isolate comfortably in their homes, transitioned to working remotely with access to electronic devices and the internet, dedicated time to home school their children and families reported being happier during the lockdown²⁰. The situation in disadvantaged communities, particularly in informal dwellings, stood in stark contrast to this image²¹. Challenges in disadvantaged communities were overcrowding, poor sanitation, lack of access to personal protective equipment such as masks²², and most notably, a dire lack of food and basic supplies. This contributed to hunger riots²³, shop looting²⁴ and confrontation with the South African National Defence Force (SANDF) and the South African Police Service (SAPS)²⁵. The SANDF and SAPS militantly surveyed communities, utilised intimidation tactics and brutality and incarcerated those in violation of lockdown restrictions²⁶. To mitigate economic challenges many organisations lobbied donations to collect and distribute food parcels whilst the South African government allocated ten percent of the COVID-19 stimulus package toward social assistance including an increase in the amount of all existing grants and the addition of a new COVID-19 social relief or distress grant²⁷.

These efforts, however, were minimal in addressing the grave inequalities rooted in disadvantaged communities.

Occupational justice perspective

Durocher describes occupational justice as the promotion of fairness, equity, and empowerment that enables opportunities for participation in occupations for the purposes of health and well-being²⁸. According to Townsend and Wilcock²⁹ and Wilcock³⁰, an occupational justice perspective observes individuals as occupational beings with idiosyncratic occupational needs, wishes and habits dependent on their circumstances and capacities, with each individual requiring different occupational opportunities to realise their talents and flourish. The occupational justice perspective observes participation through a socio-political lens by examining the degree of individual and population right to meaningful, purposeful and varied occupations that aim to improve quality of life, meet basic needs and realise potential^{29,30}. The South African lockdown highlighted numerous occupational injustices more rampant in lower-middle class individuals. These injustices stem from the residual remnants of occupational apartheid that saw the unequal distribution of occupational opportunities in accordance with a system of racial classification³¹. Restrictions on social participation, community mobility and gathering for connectedness resulted in occupational deprivation³² and marginalization³³. Restrictions to participate in occupations for work for financial gain furthered the pre-existing challenges of lower-middle class individuals to meet basic needs such as food, water, medical care and personal protective equipment. This was compounded by the fear and anxiety around the uncertainty of when or if the lockdown would end and if individuals would have a job to return to. Imposed home isolation for prolonged periods of time has resulted in occupational imbalances such as being unoccupied and under-occupied as not everyone was afforded the same set of privileges^{29,30}. Transcending the barriers of class and privilege, the lockdown resulted in widespread occupational alienation³² when examining participation in occupations linked to religious observance and culture through the closure of sacred religious and cultural institutions. An argument can be made that efforts have been made to adapt through the use of technological platforms, however, it can be proposed that this adaptation was insufficient and lacking in meaning through unfamiliarity. Most notably, the lockdown has resulted in the grave removal of individual occupational choice and autonomy thus leading to powerlessness. This state of powerlessness was more debilitating to those subjected to multiple occupational injustices and with a lesser degree of privilege. This resulted in occupational disruptions³⁴.

Occupational disruptions

Nizzero describes occupational disruption as a temporary disturbance in an individual's typical pattern of participation³⁴. Emotional responses such as uncertainty, anxiety, and vulnerability are common when experiencing occupational disruption due to the loss of occupations and/or social connections, as well as feeling a lack of control. This is sup-

ported by Klinger who stated that occupational disruptions could have a negative influence on health, well-being, and quality of life³⁵. O'Leary⁷ and Cloete⁸ noted that significant disruptions in roles and routines have been observed amid the COVID-19 pandemic. Routine is significant as it allows individuals to shape the manner in which they spend their time, whilst roles form the essence of who we are and can reflect priorities and values in life⁷. When roles and routines are negatively influenced it can affect mental well-being as well as the individual's perspective of their world³⁶. Nizzero posited three adaptive strategies to overcome occupational disruption including: (a) modifying previous occupations; (b) maintaining order or routine; and (c) adopting new occupations or routines³⁴. These strategies align with Doroud, Fossey and Fortune's conception of gradual re-engagement in occupations that promote health recovery by establishing structure, routine, hope, empowerment, sense of self and connectedness³⁷. These strategies are guided by the overarching theory of occupational adaptation^{1,3}.

Occupational adaptation

Occupational adaptation is described by Schkade and Schultz¹ as an internal normative process wherein the overwhelming desire to be engaged in meaningful occupations is integrated with the process of striving for, and achieving mastery, in occupations. Adaptation is an interdependent relationship between the person, environment, and the interaction between the person and the environment¹. Nelson³⁸ positioned adaptation as a process wherein the person has the internal capacity to alter their sensorimotor, cognitive and psychosocial reserves by engaging in meaningful occupations. Nelson and Jepson-Thomas³⁹ defined adaptation as the effect of occupational performance on the individual's developmental structure and further stated that occupational adaptation does not always yield a satisfactory or optimal resolve. Frequent and reoccurring errors in occupational performance may result in a sense of learned helplessness or maladaptation when confronted with future occupational challenges. Kielhofner³ described occupational adaptation as the process of constructing an occupational identity and achieving competence over time in the context of one's environment. Research centred on occupational adaptation emphasises the significance of the interaction between the person and the environment. The lockdown has underscored the improved adaptive responses of South Africans to occupational challenges resulting from novel environmental barriers. Throughout this, we have observed increased desires and efforts to socialise and connect to others on walks to communal taps or toilets in townships, neighbours sitting in front of their closely positioned homes talking, strangers waving or nodding in passing or whilst queuing in grocery store lines to collect supplies, and mothers neglecting their own occupational needs to assume the role of caretaker, nurse, counsellor, teacher and more, to meet her children's occupational demands. Although occupational adaptation cannot be measured instrumentally, we can observe a strengthened adaptive response through the emergence of three predictive outcomes namely; (1) an improved self-initiation, (2) generalisation, and (3) improved

relative mastery¹. Eudemonic occupations have long been attributed to the instillation of adaptiveness during challenging times^{40,41}.

Eudemonic occupations

Eudaimonia infers a state or condition of existing in good spirits which can commonly be translated to one's state of happiness or well-being^{40,41}. Eudemonic occupations can be observed as those going beyond the mere utility of survival and, instead, nurture the essence of who we are as beings whilst reflecting our hearts, dreams and purpose. Fulfilment of eudemonic occupations fosters eudemonic well-being described by Ryan⁴² as when an individual's life activities are the most congruent or interconnected with deeply held values or beliefs and they are holistically or fully engaged. Waterman⁴³ further posits that eudemonic well-being is enriched by doing what is worth doing. Spirituality is observed as a significant dimension in the attainment of eudemonic well-being through the introspection, strengthening and expression of the inner self. Spirituality in alignment with occupational therapy literature is reflected as an inner resource independent of religion or denomination, and rather of occupations that restore and contribute to the self⁴⁴. Thibeault proposed five occupational gifts⁴⁵ that were expanded upon by Zafran⁴⁶ that reflect resilience through an exploration and development of the spiritual self. Connecting occupations^{45,46} are those in which we experience belonging to others and to life through connecting online or in person, giving back to the community and interconnectiveness to pets and nature. Centring occupations^{45,46} foster awareness, presence, and calm through meditation, walks in nature, repetitive activities such as knitting or grooming a pet. Creative occupations^{45,46} aim to meet the human need to explore, create and play without judgment or the need to develop product or skill mastery. Contemplative occupations^{45,46} are those that induce awe of life by focusing on the bigger picture through prayer, journaling, or reflective walks in nature. Contributing occupations^{45,46} allow us to give back within the communities that support and nurture us. Engagement in eudemonic occupations has the potential to provide predictability, structure and routine; belonging and connectedness; and a sense of hope for the future⁴⁵.

In summary, the review of literature revealed some evidence that the COVID-19 lockdown affected the occupational engagement of individuals through disruptions experienced in meaningful occupations. Disruptions further highlighted grave societal inequalities through the widespread incidence of occupational injustice. These occupational injustices simmered back down to the persisting argument of equality versus equity as rooted in South Africa's complex history regarding racial classification. Not all participants were provided with equitable opportunities for holistic engagement during the lockdown, thus, laying the potential for a decreased state of health and well-being. To foster occupational engagement for improved health and well-being, literature suggests a need to develop resilience to disruptions through an increased state of adaptiveness. It is possible that engagement in eudemonic occupations has the potential to facilitate resilience in individuals and enable

them to adapt to challenging situations. However, there is limited research exploring the adaptiveness of older adults in South Africa within the context of a pandemic or lockdown.

METHOD

This study aimed to explore the adaptiveness of older adults to disruptions experienced during South Africa's COVID-19 lockdown. The research design for this study was qualitative meta-analysis, which is a method for reviewing qualitative studies that entails a rigorous secondary qualitative analysis of primary qualitative findings⁴⁷. Qualitative meta-analysis provides a more comprehensive description of a phenomenon researched by a group of studies⁴⁷.

Primary qualitative studies

Four primary qualitative studies conducted by student occupational therapy researchers under the supervision of two of the authors were reviewed for this paper. This allowed researchers to gain an in-depth and contextually rich understanding of the process by which older adults have developed adaptiveness to disruptions experienced during the South African lockdown^{48,49}. The student researchers voluntarily consented for their studies to form part of the meta-analysis. According to the method outlined by Timulak⁴⁷, two of the authors critically appraised the four primary studies to ensure data quality and trustworthiness. The studies were screened and included in the meta-analysis based on similarity in focus, key research question, aim and objectives, context, and the theoretical and methodological frameworks. All four studies employed a qualitative, exploratory-descriptive design and semi-structured interviews to explore and describe the influence of COVID-19 on the roles and routines of adults aged 55 years and older during the hard lockdown period in April and May 2020. The findings of the primary studies became the data for the meta-analysis⁴⁷.

Study selection and participant selection

All four primary studies utilised purposive⁵⁰ and snowball sampling⁵¹ to recruit a total of 16 participants. These sampling methods allowed researchers to gather participants whose lived experiences were central to the studied phenomenon whilst strictly adhering to the COVID-19 restrictions on travel and person-to-person contact. Researchers primarily used strategic word of mouth directed to key friends, family and/or community populations to identify potential participants meeting the inclusion criteria: aged 55 years or older, male or female, and resident in South Africa during the COVID-19 lockdown. Participants were then recruited through the use of technological platforms including: telephone calls, WhatsApp Messenger, Short Message Service and email. In contexts where potential participants were not technologically proficient or did not have access to technological devices, researchers recruited them in person. Most participants were from lower-middle socioeconomic backgrounds in two provinces – the Western Cape and Mpumalanga (Table I, page 58).

Data collection

Data for the four primary studies were collected in May 2020 through face-to-face contact or using technological

Table I: Participant demographic information

Pseudonym	Gender	Age	Ethnicity	Socioeconomic background	Location (Province)
P1	Male	72	Coloured	Low-middle	Western Cape
P2	Female	70	Coloured	Low-middle	Western Cape
P3	Male	64	White	Low-middle	Western Cape
P4	Male	63	Unspecified	Unspecified	Western Cape
P5	Female	64	Black	Low-middle	Mpumalanga
P6	Female	75	Unspecified	Unspecified	Western Cape
P7	Female	88	White	Low-middle	Western Cape
P8	Female	73	Coloured	Low-middle	Western Cape
P9	Male	55	Black	Low-middle	Mpumalanga
P10	Male	66	Coloured	Low-middle	Western Cape
P11	Female	54	Black	Low-middle	Mpumalanga
P12	Female	77	White	Low-middle	Western Cape
P13	Female	71	Coloured	Low-middle	Western Cape
P14	Female	69	Coloured	Low-middle	Western Cape
P15	Female	58	Black	Low-middle	Mpumalanga
P16	Female	60	Unspecified	High	Western Cape

platforms such as: telephone calls, WhatsApp Messenger, and email. Researchers utilised individual interviews guided by semi-structured and open-ended questions to facilitate discussions. The key questions focused on older adults' experiences of the influence of COVID-19 and the South African lockdown, how this influenced their occupational engagement, and how they adapted. Telephone calls were recorded and voice notes were saved and transcribed verbatim, whilst written responses were saved. These transcripts were then analysed separately for each primary study and the findings were written up as chapters of the four research reports. The four research reports, with a focus on the findings chapters, comprised the data sources for the qualitative meta-analysis presented in this paper.

Data analysis

Relevant information from the primary studies was mapped onto a data extraction spreadsheet, and included title, research question, study aim and objectives, theoretical framework, methodology, research setting, findings, discussion, and recommendations. Subsequently, all data extraction spreadsheets (transcripts) were imported to generate one master transcript, and organised using a coding framework to be analysed thematically⁵².

The first author utilised Braun and Clarke's six steps of thematic analysis to guide data analysis through the process of familiarisations and noticing similarities and patterns⁵³. This process is marked by the review of the transcripts numerous times with the intention of making sense of the data. Secondly, initial codes were identified and grouped together based on a similar narrative and were organised using a data extraction sheet. Thirdly, codes were further grouped together and organised to create sub-themes that aligned more closely with the research topic. Themes were then loosely created in representation of the data housed in each sub-theme. Fourthly, themes were reviewed based on the coded extracts and full data set and some of the themes

were collapsed. In the fifth step, themes were named by providing a brief description of the narrative represented by the grouping of the sub-themes and supportive data extracts. The final step involved the written reporting of the findings, which was done through analytic narrative and data extracts. Two of the authors closely monitored the process of data analysis to ensure neutrality in the representation of the data as well as a consensus of the article's overriding narrative.

Trustworthiness

Trustworthiness was ensured by means of the above-mentioned critical appraisal of the primary studies⁴⁷, and ensuring credibility, transferability, dependability and confirmability⁵⁴. Credibility was ensured through the process of triangulation⁵⁵ of data sources (multiple participants from two provinces in South Africa and four primary research reports) and multiple researchers. One researcher acted as auditor, monitoring procedures in the meta-analysis and maintaining distance from the analysis process in order to check bias in the analysis⁴⁷. Transferability was ensured by sourcing a diverse sample across the primary studies⁵⁶ to produce a robust and well-developed narrative. Dependability and confirmability were ensured through the provision of an audit trail and dense descriptions of the context, the sampling method and characteristics of participants, data collection and analysis.

Ethics

Ethics approval was obtained from the University's Biomedical Research Ethics Committee (BM20/9/3). All participants in the four primary studies and the meta-analysis study took part voluntarily, provided informed consent and were aware of their right to withdraw from the study at any stage without concern of repercussions. All health and safety protocols to prevent the transmission of COVID-19 were strictly adhered to throughout the study. Participant confidentiality and privacy was maintained throughout. Participants

were assigned pseudonyms and all data were stored on password-protected devices only accessible to persons directly involved in the study.

FINDINGS

Data analysis yielded three dominant themes: (1) Insight into COVID-19 as an illness, (2) occupational disruptions experienced by older adults, and (3) developing a state of adaptiveness. These themes comprised twelve sub-themes and are supported by data extracts (Table II adjacent).

Theme One: Insight into COVID-19 as an illness

The first theme deals with the older adults' insight into COVID-19 as an illness, which highlights their understanding of the pandemic. This theme further captures the awareness about the vulnerability of older adults in developing moderate-severe health outcomes.

What is COVID-19

Participants perceived COVID-19 as a novel virus similar to the common cold or flu in its presentation of a dry cough, fever, tiredness and fatigue, however, emphasised its severity in likening it to a terrible virus grave enough to cause death.

"My understanding is that it is a terrible virus and people have died from it." (P1)

"Somebody that I knew died, she was a nurse." (P2)

Older adults are vulnerable.

It was determined that the risk of developing moderate-to-severe COVID-19 health outcomes was more prevalent in older adults due to their progressing age. This risk was exponentially increased by the prevalence of comorbidities such as diabetes mellitus and other immunocompromising conditions such as HIV/AIDS. Participants positioned older adults living with comorbidities as the most vulnerable South African population.

"COVID-19 affects us in old age because we have a lot of underlying medical problems. I have diabetes and I take ARV [antiretroviral] pills, so this puts you at risk. We are vulnerable." (P3)

Theme Two: Occupational disruptions experienced by older adults.

The second theme focuses on the occupational disruptions experienced by the older adults that influenced their occupational engagement during South Africa's COVID-19 lockdown.

Roles and routines

Participants reported that the abrupt enforcement of the South African COVID-19 lockdown during the COVID-19 pandemic caused significant disruptions in occupational engagement through the immediate suspension of previously held roles and routines. Previously engaged in roles and routines that provided participants with structure, predictability, autonomy through decision-making abilities,

Table II: Themes and sub-themes

Themes	Sub-themes
Insight into COVID-19 as an illness	What is COVID-19? Older adults are vulnerable
Occupational disruptions experienced by older adults	Roles and routines Social participation Travel/community mobility Work participation Religious observance Deteriorating mental well-being
Developing a state of adaptiveness	A change in perspective Adapting to new environments Adapting by using technology Strengthening the spiritual self

and the power to select meaningful or purposeful tasks or activities that filled up the day, were no longer possible during the lockdown.

"The lockdown has caused so much change and without warning. It really has a big impact on my ability to fulfil my daily routines. I don't know what to do anymore." (P4)

The lack of engagement in meaningful roles and routines caused confusion, frustration, uncertainty and led to participants questioning who they were and what they were doing with their time.

"My roles have changed overnight. Sometimes I don't know what to do because who I was, I can't be anymore." (P5)

Social participation

COVID-19 can largely be considered a social spreader in that the virus spreads more rapidly through social contact with infected persons or contaminated surfaces. The South African government, thus, more stringently regulated occupational engagement in social activities. Participants reported how vastly these restrictions negatively influenced their social and family roles resulting in loneliness, isolation, and disconnectedness.

I used to visit friends and have them visit me three or four times a week and now we cannot do that. I feel alone. (P6)

"I used to see my family a lot. Now I only get to see my family once a week when they drop off my shopping, but they always say, 'Ma I'm staying in the car.' I wish they stayed longer." (P7)

Travel/community mobility

Participants highlighted restrictions on travel and community mobility as being instrumental in hindering their social participation and the fulfilment of family roles. This significantly affected participants as travel and community mobility was fundamental in aiding their connections to others.

"My children can't visit even though I live close-by. People

are not allowed to travel.” (P6)

“I used to visit my family but now I can’t drive anywhere so I don’t see them.” (P8)

Travel, community mobility and social activities were closely monitored by the South African Police Service and National Defence Force through constant community surveillance and the implementation of a national curfew. Participants reported feeling anxious and fearful when leaving their homes out of concern that they could be arrested.

“I like being able to walk around my area but now I am worried I will get arrested.” (P7)

Work participation

The South African COVID-19 lockdown called for the immediate closure of all business sectors, which fundamentally impacted upon participants’ ability to engage in work. This is significant, as participants reported that the fulfilment of their worker role provided structure, predictability, meaningfulness, purpose and financial means. Without some form of income, participants feared that they or their families would struggle to meet basic needs such as food.

“Lockdown prohibits me from doing my work.” (P4)

“It [lockdown] has a great impact on my ability to fulfil my role as breadwinner. My ability to provide has been reduced to almost zero and it’s concerning because my family will go hungry.” (P8)

One participant reported drawing money from his unemployment fund to cover basic expenses however, that this was insufficient and that the amount became less each time.

“I am getting money from the UIF [Unemployment Fund], but it’s not the same. It’s not enough to cover all my expenses and it gets less every month.” (P15)

Another participant highlighted that community soup kitchens were closed under the lockdown restrictions which further reduced opportunities for hunger relief for persons with financial challenges.

“I am involved in a church community soup kitchen, but it’s closed, and the people don’t have food around here.” (P1)

As findings from the medical and science communities emerged and the lockdown alert levels were eased to facilitate the increased but still regulated movement of individuals, participants highlighted still being unable to work due to their age and the presence of chronic illnesses.

“I am not able to work because I am 55 and have a chronic sickness.” (P9)

Religious observance

The South African COVID-19 lockdown caused the immediate closure of places of worship, resulting in disruptions in religious observance. Participants reported being unable to attend church and elucidated a longing for connectedness through a shared religious experience. Participants further positioned the social self as being interlinked with the religious self.

“I can’t go to church. The fact that you can’t see your friends by the services in church is something I miss a lot.” (P6)

Several worship facilities adjusted their approach to religious observance as the lockdown alert levels eased through the use of technology and implementation of government recommended precautionary measures. Participants, however, reported still being unable to participate due to their progressed age and lack of technological proficiency.

“The staff and I collect for the church charity project; I can’t get it to the people anymore because of my age and that’s frustrating for me.” (P2)

“I am an esteemed member of my congregation and not being there for meetings is affecting me. Other members continue with meetings on their phones, I don’t know how to do that and I am an old man, I don’t want to be a burden to anyone.” (P3)

Deteriorating mental well-being

Disruptions in the occupational engagement of participants caused deterioration in mental well-being. Participants reported feeling sad, miserable, empty, helpless, burdensome, neglected and forgotten.

“I have been feeling miserable. I feel as if something has been taken away from me. Like the rug has been pulled from under me.” (P10)

“I have to sit at home and feel helpless.” (P8)

“I feel empty inside.” (P1)

Disruptions exacerbated symptomology in participants diagnosed with depression.

“I have a history of depression. My daily routine helps me get my mind off things. Now I feel trapped in the house.” (P11)

Theme Three: Developing a state of adaptiveness.

The third theme highlights how participants developed a state of adaptiveness to disruptions experienced in their occupational engagement. This was achieved through (a) a change in perspective, (b) adapting to new environments, (c) adapting by using technology, and (d) strengthening the spiritual self.

A change in perspective

Participants believed that the first stage to developing adaptiveness is through a change in perspective of oneself in relation to the various environments. With time, introspection and critical reflection, participants were able to accept the unpredictability of their environment, develop hope that COVID-19 and the lockdown were temporary and were optimistic that the opportunity to reintegrate, re-engage and reconnect would come soon.

"I know that this lockdown isn't going to last forever, and I know that I will be with my family and friends again. I just need to stay positive." (P7)

"I have learnt that I would rather miss my family for a little bit now and know that they are safe, than miss them forever if they died." (P12)

Adapting to new environments

Participants adapted to their new environments by establishing a state of peace with external circumstances and by implementing changes that fostered re-engagement. Participants reported readying their homes for re-engagement in social participation through the implementation of a designated area for visitors to practice good hand hygiene through hand-washing and/or sanitizing.

"I have sanitiser at the door and a bucket of water if you want to wash your hands." (P13)

Participants further reported overcoming barriers in their environment by designating a relative to fulfil high risk occupations such as shopping. Additionally, participants reported adjusting their times of engagement. This allowed participants to regulate their contact with others, thus reducing risk of potential COVID-19 infection.

"My daughter does my shopping for me now." (P8)

"I can only go early in the morning to the shop because then its empty and nobody is gonna [sic] bump into me". (P12)

Adapting by using technology

Technological tools such as a cell phone, laptop, tablet, and radio have been instrumental in facilitating re-engagement. One of the most noteworthy applications utilised by participants was WhatsApp messenger as it allowed participants to connect with family and friends through instant messaging, voice notes, sharing multimedia and voice and video calling.

"WhatsApp and social media help a lot because you still have access to others." (P2)

"I can talk to all of my friends at the same time now, not just one at a time. Yesterday I video-called with 4 friends on WhatsApp." (P8)

"I use WhatsApp to talk to my church friends and Father sends his sermon as a voice-note to us now. I listen to that every Sunday." (P12)

Strengthening the spiritual self

The South African COVID-19 lockdown was perceived as an enabler that facilitated participants to engage in occupations that strengthened the spiritual self. Participants reported that families now had the time to come together, pray and perform acts of worship. This allowed participants to focus on life's bigger picture.

"Families are spending lots of time together performing these acts of worship together. In this way this lockdown has been a blessing." (P14)

Participants used their abilities to engage in crafts such as knitting that occupied their time and calmed their mind through repetitive work activities. The knitted products motivated the participants to engage in occupations that fulfilled the purpose of giving back and being supportive to the communities.

"I knit bed socks and beanies [caps] for my family and the people in the road." (P7)

Participants experienced a sense of belongingness because they were able to engage in occupations that facilitated caring for others as part of intergenerational relations and occupational legacy. It was noted that the participants achieved a sense of meaning and purpose because they gave back to their families in need of care.

"Just before the lockdown my grandson was detoxing from his drugs at my house. This was difficult for him, and he needed me to look after him. I like that I am able to be here for him all the time and we are always together, so he doesn't feel alone during this difficult time." (P12)

"My mother has been very sick for some time, and I was only able to visit her at most once in a month. I can at least take care of her now since I am not going to work during this time. She will now definitely get better, I'm sure of that." (P15)

Participants engaged in occupations that encouraged a strengthened connection to the self, nature, and pets.

"I spend more time working in the garden and with my pets." (P4)

Participants engaged in occupations that fostered improved awareness, presence and calm through exercise, yoga, meditation, mindfulness and rest.

"I used to go to the gym before all of this started, that used to relax and help me. Now I do things like home exercises and yoga to help me." (P15)

"I have started meditating and reading the bible more."
(P11)

"I feel like my mind is resting. I can connect with myself."
(P11)

DISCUSSION

This study provided an insight into older adults' adaptiveness through the occupational disruptions that emanated from the eruption of the COVID-19 pandemic. Overall, the findings accentuated that there were vulnerabilities for older adults, as highlighted in the first theme (*Insight into COVID-19 as an illness*). The findings are congruent with Kas-eje¹⁴, Adhikari¹⁵ and Chen⁵⁷ who indicated that older adults had the highest risk regarding exposure to COVID-19 and had the potential to develop moderate-severe COVID-19 related complications that can potentially result in death. This risk is exponentially compounded by the prevalence of comorbidities such as hypertension, diabetes mellitus, obesity, chronic obstructive pulmonary disease or any other respiratory illness^{16,17}. In the findings, participants reflected on themselves as the vulnerable population due to their progressed age. Participants 3, 9 and 11 further identified their vulnerability by indicating that they were living with comorbidities. This vulnerability was compounded when considering that South Africa has a weakened healthcare system that's efforts have been prioritised to mitigate a high population incidence of HIV/AIDS, tuberculosis, malnutrition, and lifestyle diseases¹⁴ and when considering that COVID-19 was a novel virus with limited research around transmission and management. This caused significant stress, anxiety and apprehension in the study sample. These findings corroborate Chen's study⁵⁷, which indicates that older adults' lives were disrupted because they experienced tremendous stress and psychological burden.

The findings in the second theme *Occupational disruptions experienced by older adults* underscored that the measures implemented to mitigate the influence of the pandemic and consequent lockdown, such as confinement, community restrictions, stay-at-home and social distancing, resulted in social isolation and loneliness among older adults. These findings indicated that the older adults were occupationally alienated because they experienced prolonged disruption, which is resonant with Townsend and Wilcock^{29,30}. It can be argued that all populations experienced a degree of occupational alienation during the COVID-19 lockdown as marked by social isolation and loneliness; however, the findings indicate a clear discourse in terms of reduced freedom of opportunity owing to age. Additionally, the disruptions of the older adults' routines made them experience emptiness and a sense of meaninglessness, which affected their sense of identity. The results of the synthesis revealed that older adults' rights to exert individual autonomy and benefit from fair privileges seemed to have been infringed because they were occupationally marginalised and imbalanced^{29,30}. This is supported by the extracts in the subtheme *Roles and routines*, which indicated that older adults experienced a sense of idleness, as they did not know what to do anymore.

In the subtheme *Social participation*, it was evident that the older adults experienced a sense of disconnectedness as they were unable to spend meaningful time with relatives, friends, and families. Furthermore, in the subtheme *Travel/community mobility*, the findings reinforced Maldonado-Torres' assertion that the structures of coloniality of power have emerged during South Africa's COVID-19 lockdown and restrictions, as the government-controlled people's movements⁵⁸. This is further indicated that the coloniality of power was evident in the findings that reported that older adults feared being arrested if they were found driving or traveling around their community. Therefore, these findings indicated that government restrictions resulted in coloniality of being, because older adults' meaning of humanity was violated and led them to experience dehumanisation⁵⁸. Older adults' right to exert individual autonomy through choice in occupations was violated because lockdown regulations prohibited them from continuing with economic occupations as highlighted in the subtheme *Work participation*. This is resonant with Manahan⁵⁹ who shared that social distancing and stay at home orders can also negatively impact older adults' jobs and economic stability. Most notably, the lack of opportunity to participate in economic occupations highlighted disparities amongst societal classes. Within this narrative, it was observed that the lockdown restrictions were easier to adhere to by more privileged individuals that perceived the stay-at-home order as an opportunity of respite, family reconnection and transition to a new opportunity to work from home whilst less privileged individuals struggled to meet their basic needs such as food. The South African government implemented social relief strategies in the form of increasing existing social grant amounts and created a COVID-19 relief or distress grant whilst many organisations lobbied for food donations to distribute food parcels. This was furthered by encouraging businesses and employees to draw from the unemployment fund. These efforts however, were minimal in resolving the hunger and food insecurities crisis that plagued so many disadvantaged communities. The lockdown restrictions coupled with South Africa's complexed socio-political history resulted in widespread experiences of disconnection from society, hopelessness, helplessness, isolation and desperation all whilst fearing illness and death.

The findings emerging from the third theme *Developing a state of adaptiveness* indicated that the South African COVID-19 lockdown-related occupational disruptions were powerful events that facilitated the process of occupational adaptation among older adults. These findings reverberated Grajo's explanations of occupational adaptations as a product of engagement in occupations; process that emerges during transaction with the environment; manner of responding to change and life transitions; and process to form a desired sense of self⁶⁰. In one subtheme, *A change in perspective*, the findings indicated that the South African COVID-19 lockdown provided many older adults with the opportunity to engage in a gratitude exercise, as a flourishing activity that facilitated critical reflection and positivity⁶¹. This is consistent with Grajo who indicated that participation in occupation enables people to regenerate their visions of

possibility to ameliorate the occupational challenges, as a transaction with the environment⁶⁰. However, not all older adults were afforded the same opportunity when considering their interaction with their environment. This is largely due to South Africa's complex history owed to the Apartheid regime that has kept many South Africans, including older adults, suspended in a state of lesser privilege. Not all older adults underwent a changed perspective within similar contexts and with the same opportunities.

In responding to change and life transitions, the findings from the present meta-synthesis indicated that older adults experienced occupational adaptation because they altered the situation by reclaiming their roles and participating in alternate occupations to address the occupational challenge. This kind of adaptive gestalt response supported the older adults to configure their sensorimotor, cognitive, and psychosocial involvement in dealing with the occupational disruptions. It was evident that the older adults' occupational responses reflected a relative mastery, as they adapted their environment to achieve role expectations. This corroborates Schkade and Schultz's assumption that relative mastery is achieved when the person experiences the occupational response as efficient (use of time and energy), effective (production of desired result) and satisfying to self and society¹.

The older adults' state of occupational functioning was changed due to the South African COVID-19 lockdown restrictions and subsequent disruptions in occupational engagement. However, the findings indicated that the older adults strived for normality as far as possible, such as using technology to compensate for the loss of connection with others, which reinforced occupational adaptation. The findings are in agreement with recent studies that supported the use of technology to enhance the relatedness, mental and psychological needs of well-being⁶². It was evident the use of technology facilitated occupational adaptation, as older adults were able to connect with others using a variety of social media platforms such as WhatsApp to video call church friends and receive sermons. In accordance with occupational adaptation, the findings of the meta-synthesis indicated that the older adults developed a sense of competence, self-efficacy, and identity, which corroborate other studies^{60,63,64,65}. This process of dynamic occupational adaptation by the older adults speaks to a higher degree of resilience to environmental barriers.

It was evident in the sub-theme, *Strengthening the spiritual self* that the older adults strived to address the occupational disruptions, and occupational injustices emanating from the South African COVID-19 lockdown related restrictions that resulted in coloniality of being. Therefore, the findings validated that engagement in eudemonic occupations appeared as adaptive strategies that sustained older adults' adaptiveness so that they may pursue their purpose in life as valuable contributors to society⁵⁹.

Engagement in centering^{45,46} occupations such as meditation, attending online church and reading bible appeared as religious and spiritual activities that enabled the older adults to experience occupational adaptation, which supported their occupational identity. It is noted that the centring oc-

cupations^{45,46} was related to human flourishing including happiness and life satisfaction, mental and physical health, meaning and purpose, and close social relationships⁶¹.

CONCLUSION

This study explored the adaptiveness of older adults to disruptions experienced during the South African COVID-19 lockdown. Evidence illustrated that older adults experienced disruptions in roles, routines, social participation, travel and community mobility, work participation and occupations linked to religious observance. These disruptions arose secondary to the South African government's top-down approach in the implementation of lockdown restrictions that, most significantly, stripped citizens of autonomy and resulted in the experience of powerlessness. The disruptions led to the deterioration of individual and population well-being as indicated by sadness, emptiness, helplessness, powerlessness, feeling neglected, forgotten, and burdensome. To surmount their deteriorating mental well-being consequent to disruptions in occupational engagement, older adults improved their state of adaptiveness through (a) a change in perspective; (b) adapting to new environments; (c) adapting by using technology; (d) expanding roles and routines; and (e) strengthening the spiritual self. Most noteworthy, participants reflected on strengthening the spiritual self through engagement in eudemonic occupations, which included the occupational gifts; contemplative, contributing, connecting, and centring occupations. This promoted a reconnection to the self, the community, and a greater life purpose, thus, encouraging and improving resilience to negotiate barriers.

The COVID-19 lockdown was monumental in highlighting the degree of socio-political change that is needed to transform many of the persisting fragments pertaining to society when considering privilege. The South African population should be commended for their increased resilience to transcend many complex barriers and adapt. This continual state of adaptation against environmental barriers however, should not become customary as it has the potential for individuals to neglect their own occupational desire, needs and wants thus laying the potential for a disconnection from one's occupational identity. Future research can look at this relationship or could explore health outcomes of persons unable to develop a state of adaptiveness to overcome disruptions in occupational engagement.

Acknowledgements

The authors acknowledge and thank the four students who conducted the studies and the 16 participants for their participation.

Declaration of Conflicts of Interest

The authors declare no conflicts of interest.

Author contributions

Aaqil de Vries was involved in the literature review and data analysis and took the lead in writing the manuscript. Thuli Godfrey Mthembu supervised some of the student research projects which were part of the meta-analysis;

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