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RESEARCH

# Functional limitations and coping mechanisms of women aged 60 years and older with self-reported hand osteoarthritis

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**Background:** Hand osteoarthritis (HOA) is common in older women who seem to cope with the associated limitations in hand function. The importance of identifying coping mechanisms within a local context might have implications for intervention, especially with the introduction of National Health Insurance.
**Method:** A three-phase sequential exploratory mixed methods design was used. The sample consisted of 71 women aged 60 years and over with self-reported osteoarthritis living in Wentworth, Durban. A screening questionnaire, the Arthritis Impact Measurement Scales 2-Short Form (AIMS2-SF), as well as semi-structured interviews, were used to explore participants' functional limitations and coping mechanisms.
**Results:** The majority of participants were aged 74 years or younger. Seventy-two per cent accessed health care at the primary healthcare clinic at a seniors' service centre. Eighty-seven per cent reported hand symptoms, 10% had self-reported, doctor-diagnosed HOA, although 47% met or partially met the American College of Rheumatology criteria for HOA. The AIMS2-SF identified only one common problem caused with respect to functional limitation and coping mechanisms associated with HOA, i.e. managing vigorous activities. Coping mechanisms by the participants included adapting their lifestyle and activities, having a positive attitude and accepting assistance, including spiritual help.
**Conclusion:** There is a gap in the screening and diagnosis of HOA, and a lack of appreciation of its bio-psycho-social effect on women's general well-being. Holistic healthcare management was not accessible to the participants, nor directed towards improving their quality of life. Participants accessed support that compensated for therapeutic care through spiritual and other means.

**Keywords:** AIMS2-SF, coping, hand osteoarthritis, older women, Wentworth

## Introduction

Adequate geriatric service provision and utilisation are hampered by a paucity of information, the dissatisfaction of the elderly with the content and quality of service thereof,[1] and negative attitudes by healthcare workers towards service delivery to this group.[2] A survey in 32 countries on four different continents, including Africa, indicated that 60% of older people who were resident in urban areas reported difficulty accessing health care when they needed it.[3]

There is little research on the group aged 60 years and older, and even less research on the elderly with disabilities in sub-Saharan Africa,[4] particularly with respect to coping mechanisms used by older women to manage impairment, despite the high prevalence and the impact of conditions like osteoarthritis (OA).[4–10]

The 2003 South African Demographic and Health Survey identified self-reported arthritis as the second most reported chronic condition, with a high prevalence in urban areas (attributed to better access to health care).[11] Hand osteoarthritis (HOA) commonly occurs with generalised OA in postmenopausal women.[6] The impairment caused by HOA has largely been ignored, despite studies that have identified both impaired hand strength and function.[6,7,12,13] Insight into the condition over the last decade has changed. OA is now considered to be a mechanical problem with focal pathology, and not necessarily progressive. It is suggested that the focus of intervention should be biomechanical rather than just biological,[14] and should include physiotherapy and occupational therapy (OT).[15] Dieppe encourages an attitudinal change to OA from viewing it as "a boring, degenerative form of joint pathology, to (regarding it as) an exciting clinical disorder of the joints that can be manipulated and improved".[14]

The criteria for HOA differ according to use, especially in research, as there is no gold standard for the diagnosis.[15–17] The American College of Rheumatology (ACR) criteria are most commonly used.[18]

A person is deemed to partially meet the criteria if he or she has had small joint symptoms, but has not necessarily experienced pain, aching or stiffness for most days in the prior month.[16]

Anecdotal evidence suggests that occupational therapists who practise within the healthcare system in KwaZulu-Natal offer frequent interventions for conditions affecting the hands, like rheumatoid arthritis, but the same has not been reported with respect to HOA, although occupational therapists offer interventions for OA of the back, hips and knees. This suggests that women with HOA do not seek help within the present healthcare system.

This study aimed to identify urban-dwelling women aged 60 years and older, with self-reported HOA, with associated functional limitation. The functional limitation of those presenting with symptoms of HOA were identified and coping strategies explored according to the ACR criteria.

**Table 1:** Age of the study participants

| Age range (years) | Percentage |
|---|---|
| 60–74 | 74 |
| 75–84 | 23 |
| 85 and older | 3 |

## Method

### *Research design*

A three-phase, sequential, exploratory mixed-methods design was used. Instruments were used to establish inclusivity, determine the functional limitations caused by HOA, and explore the functional problems experienced and coping mechanisms used.

### *Data-gathering instruments*

The administration of a screening questionnaire to identify demographic data, including the identification of existing hand conditions, formed Phase 1 of the study.

The Arthritis Impact Measurement Scale 2-Short Form (AIMS2-SF) was administered as a commonly used reliable and valid instrument in research to measure dysfunction (Phase 2), although it has not been validated for use in South Africa.[19]

Semi-structured interviews were conducted (Phase 3), which were digitally recorded and transcribed to produce verbatim transcripts.

A preliminary pilot study was run at a similar venue to that of the main study, and the questionnaires adjusted according to the feedback. The study was conducted at a social centre for the aged in Wentworth in the eThekwini Metropolitan Municipality, KwaZulu-Natal, where members have access to health care at primary and secondary level, including OT and physiotherapy. They are also able to access other services such as social work, Meals on Wheels and home help.

### *Sampling*

Phase 1 used convenience sampling to identify 71 volunteers who met the inclusion criteria for the study. The inclusion criteria were women resident in the Wentworth/Austerville area aged 60 years and older, with self-reported OA, who attended the social centre at least once a week and were able to read English.

Twenty-five participants were enrolled in the second phase if they met or partially met the criteria for HOA as per the ACR critieria.

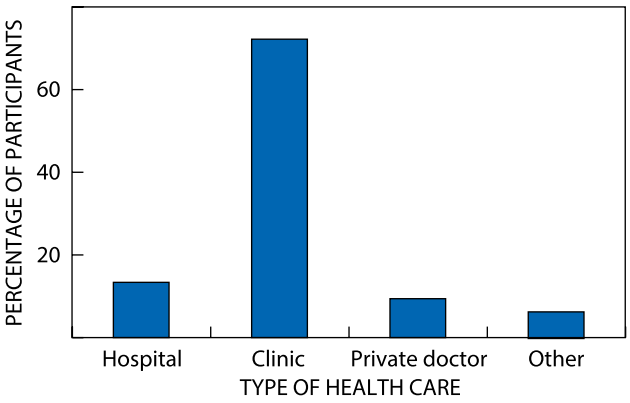



**Figure 1:** Healthcare access

Exclusion criteria for Phase 2 were restricted hand function because of conditions affecting the hand, such as neurological conditions, skin lesions, arthroplasty or amputation of digits, or any other wrist, or hand trauma or surgery during the previous three months.

Questionnaire administration and responses were noted by the researcher. Questionnaire data were coded after the session and entered into a Microsoft® Excel® 2010 spreadsheet.

Semi-structured interviews were conducted with six participants after analysis of the questionnaire data. The questions were based on broad themes around problems experienced due to HOA, coping strategies employed and accessing help.

Permission was granted by Francis Guillemin (University of Nancy, France) for the use of the copyrighted AIMS2-SF questionnaire for this research project. Ethical clearance was obtained from the Humanities and Social Sciences Research Ethics Committee of the University of KwaZulu-Natal (Ethical Clearance Number HSS/0942/011 M).

## Results

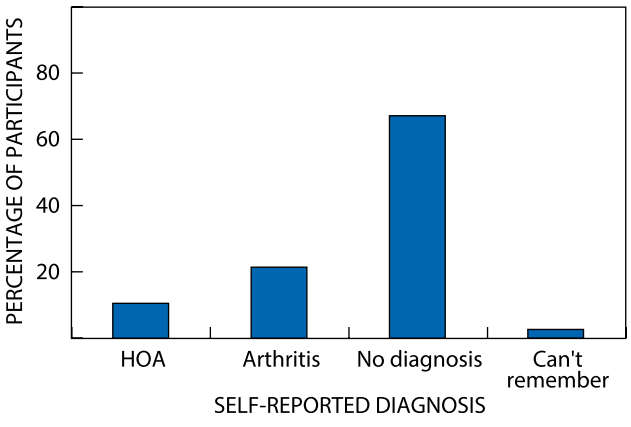
Analysis was conducted for each phase of the study. Phase 1 was analysed using descriptive statistics, Phase 2 (AIMS2-SF) according to the standardised coding provided by Guillemin. Descriptive statistics were used with percentage representation, i.e. frequencies for all the data. Interviews were analysed using content analysis with open coding on three levels. Level one identified the themes in each transcription of the participants' spoken words; level two the categorisation of similar themes under a common heading, and level three pattern matching.

### *Phase 1*

Eighty-seven per cent of the screening questionnaires met the inclusion criteria for the study. Seventy-four per cent of the participants were aged 60–74 years (Table 1).

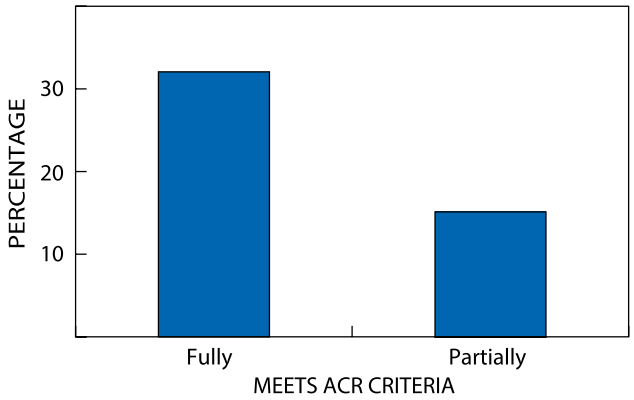
Seventy-two per cent accessed health care at the primary healthcare clinic which operates once a week at the venue. Six per cent reported that they did not access health care (labelled "other" in Figure 1) as they did not believe that healthcare practitioners and doctors specifically could offer them any help.

Therefore, the percentage of participants who had self-reported, doctor-diagnosed HOA was unsurprisingly small at 10%. Sixty-seven per cent had no formal diagnosis of arthritis, 21% a general




HOA: hand osteoarthritis

**Figure 2:** Self-reported arthritis and hand osteoarthritis




ACR: The American College of Rheumatology

**Figure 3:** The American College of Rheumatology criteria for hand osteoarthritis

diagnosis, and the balance could not remember if the doctor had told them whether or not they had arthritis (Figure 2).

Thirty-two per cent of the participants met, and 15% partially met, the diagnostic criteria for HOA (Figure 3).

Forty per cent of the participants who met or partially met the criteria agreed to participate in Phase 2.

Data for the AIMS2-SF were scored and normalised. A score of 10 was considered to represent the "best health" and 1 the "worst health" option. The data were further illustrated by using only the best and worst health options, and broken down into the four categories of questions, as per the AIMS2-SF, i.e. physical function, symptoms, affect and social isolation. The worst health option was superimposed on the best health option, where applicable, in all of the graphs. Reporting of the participants with scores in the mid range was excluded from the pictorial results as the numbers were generally small.

### *Phase 2*

#### *Physical function*

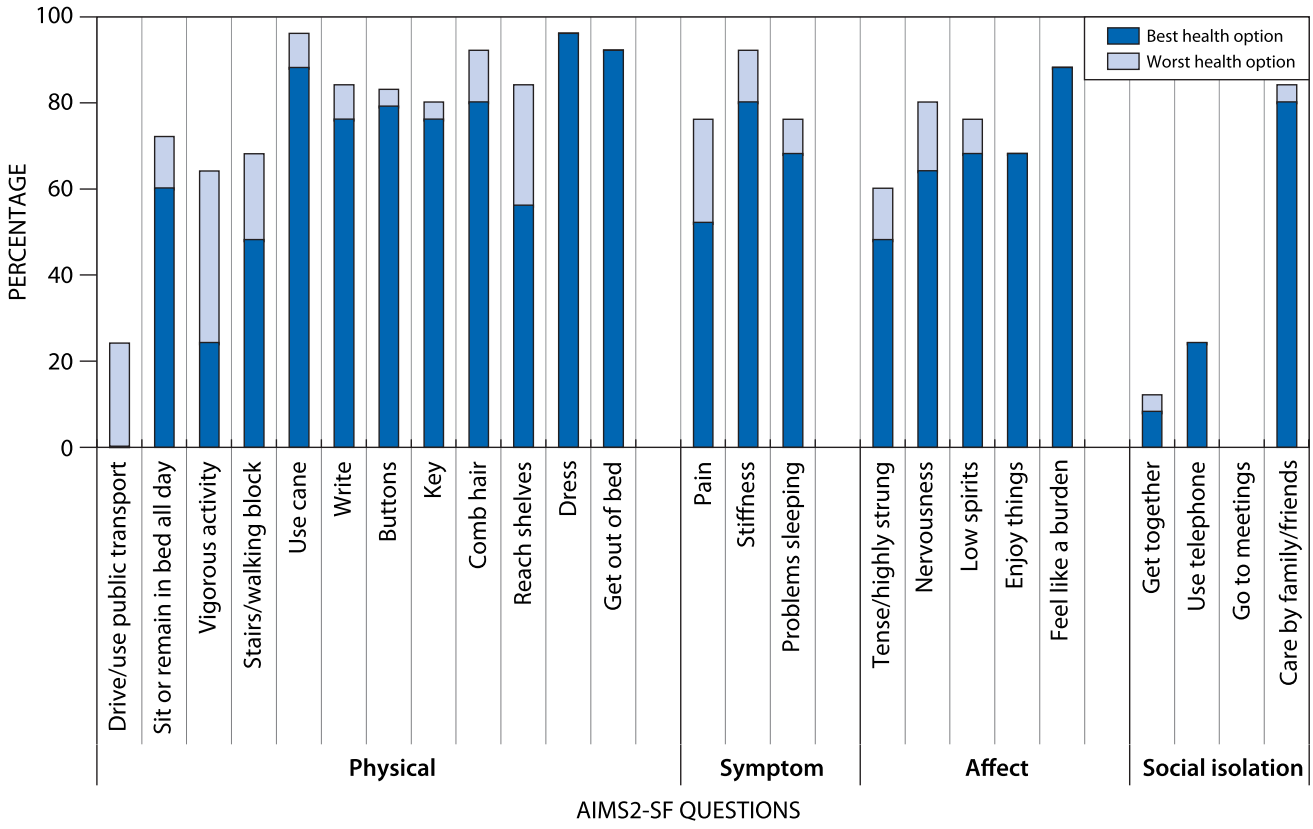
The questions concerning physical function are depicted in the first part of the graph (Figure 4). There was no best health percentage for the first question as participants generally walked everywhere. Therefore, interpretation should be performed with caution as it was not an accurate reflection of ability or limitation. There was a larger percentage (40%) of worst health scores for vigorous activities as the participants were unable to participate in these every day. The last two questions related to getting dressed and getting out of bed, where a worst health option was not applicable to any of the participants, as all reported being able to manage these activities.

#### *Symptoms*

The symptoms scale addressed issues of pain and stiffness specifically, and it was interesting to note that 80% of the participants reported the best health option for stiffness, despite the fact that all of them had interphalangeal joints that were stiff.

#### *Affect*

Sixty-eight per cent of participants reported that they enjoyed the activities in which they participated and did not feel that they were a burden to others.




AIMS2-SF: Arthritis Impact Measurement Scales 2-Short Form

**Figure 4:** Arthritis Impact Measurement Scales 2-Short Form results

*Social isolation*

Most of the participants answered in the mid range, i.e. contact with people on few, some, or most days. None of the participants reported the worst health option for telephonic contact. All of them went to meetings or attended church, but scored in the mid range as they went more than once a week, not every day. Eight per cent of the participants stated that they felt that their family and friends were sensitive to their needs.

### *Phase 3*

The interviews were reported under two main themes viz. problems experienced and coping strategies.

*Problems experienced*

The participants were specific about what caused their problems:

- Their hands: "When I carry things, sometimes they drop. I don't have good strong grip".
- Arthritis in other sites, e.g. their back, knees and hips: "I can't dance a lot. It increases the pain in my legs and back".
- Social problems: "I am sad because of problems with my children".
- Cardiac conditions: "I have a bad heart and take one day at a time".
- Pain as an activity limiter: "It irritates me when pain prevents things".

*Frustration and anger because of the limitations:* Frustration and anger with the limitations were frequently expressed, including distress at the sight of their "ugly" hands: "Ooh yes. I get depressed sometimes, because you know the knobs are getting bigger, and now even this, my wedding ring. It looks like I'll have to cut it off".

A significant number of the participants identified problems which were not covered by the questions in the AIMS2-SF. These included needing a sustained grip for carrying and holding, ironing, sweeping, completing the laundry by hand, turning on taps, lifting and wringing out the wet washing, and hanging it on the wash line.

*Coping strategies*

Five main coping strategies emerged from the data, i.e. adaptation of lifestyle or activities, avoiding activities, accepting assistance, adopting a positive attitude and accessing health care:

- *Adaptation of lifestyle or activities:* The adaptation of lifestyle or activities was used as a coping mechanism by most participants as many had changed their lifestyle to accommodate limitations with respect to activities, e.g. building rest periods into the day: "*Ja,* there's a lot of things I just can't do that I used to do before, and so I skip what I can't do". Most adapted the activities which they found to be most difficult to ensure that they could still do them, e.g. replacing their heavy pots with lighter ones.
- *Avoiding activities:* Avoiding activities was used by some women: "I leave it. No one shouts at me for anything. It wasn't done, it wasn't done" (laughs).
- *Accepting assistance:* Three types of assistance were identified, i.e. spiritual, practical and paid. Spiritual assistance was used the most widely by participants. The majority cited prayer and church attendance as the most important ways of coping. Receiving help from family was the next most common coping method. Chores were shared by various members in multigenerational families, e.g. one of the women reported that she placed the washing in the washing machine, her children helped by taking it out, and her grandson was responsible for hanging it on the line. Only one participant had access to paid assistance.
- *Adopting a positive attitude:* Participants said that they coped with life, despite their HOA, by adopting a positive attitude: "I don't complain about my arthritis, I look after myself". Many participated in hobbies such as knitting, sewing or gardening, which they felt took their mind off their problems: "I like to work in the yard now. It sort of frees me".
- *Accessing health care:* The ability to access health care was poor. Very few had discussed their hand symptoms with a healthcare professional. Medication was the main intervention used, either prescribed or available over-the-counter. The participants were divided about the efficacy of their medication, ranging from feeling sceptical about it to feeling they could not cope without it. The majority were unable to name the medications that they were using. A few reported using alternative health products, mainly OsteoEase® and glucosomine, which they felt eased the symptoms of OA, particularly the pain and stiffness. The only other interventions used were heat and exercise.

## Discussion

As the nature of pain in HOA is transient and use related, only a small percentage of women complained of pain which became debilitating at times. This is not consistent with the literature, where pain and discomfort were identified as the most affected health domain in HOA.[20] The results of this study supported the findings in the literature that many people never sought medical help for their OA-related problems.[14] Most of the participants complained about having ugly hands, which has not been sufficiently explored in the literature.[16,19,20]

All of the participants stayed in their own homes, or with a relative, and were involved with daily domestic tasks. Most of the cooking for the families was carried out by the participants as the other members of the household were at work. Only two stayed alone, and they indicated that this "kept them going" as they had to perform all of the household tasks themselves.

The majority of the women found activities involving a sustained and power grip to be the most difficult, and reported dropping things as their grip was not as strong as before, which is contrary to reports in the literature that activities involving manual manipulation were the more difficult.[7,12,13] Participation in activities involving manual manipulation included knitting, sewing, cake icing, gardening (especially weeding) and crochet. They reported difficulty with sweeping, ironing and washing by hand, cutting meat and vegetables and lifting a full kettle or pot of food, all of which require either a power grip, or a sustained cylinder grip. Most of the participants reported that these activities were difficult due to pain, which is consistent with other findings in the literature.[21]

The AIMS2-SF provides a good overall indication of function, as indicated in the literature, as it covers a broad variety of categories in the International Classification of Functioning.[22] An interpretation of the findings is influenced by the context of the community and the individual within that community when using self-reporting scales to evaluate function. The results from the AIMS2-SF indicated that three areas of physical function were limited in a large number of the participants, i.e. the physical ability to use public transport or to drive, being able to participate in vigorous activities, and the ability to walk a few blocks or climb a flight of stairs, which was contradicted by 50% of the participants who reported that they walked wherever they needed to go; potentially providing false scoring for the first item. The women reported that they did not use public transport because the drivers were impatient, did not stop for them, or they were unable to get into the minibus taxis because of where they stopped. Good demographic information is

important when interpreting data. The overall picture was that the women coped with the physical limitations of HOA. The symptom scale indicated that more than 50% of the participants did not report stiffness or pain as a limiting function, yet many demonstrated an inability to flex the affected joints in the hands, as observed when they were drinking tea and eating their sandwiches. The researcher assumed that "stiffness" might be associated with a feeling, rather than a joint that does not bend, as they did not interpret this inability to be "stiffness". The majority of participants who reported problems on the affect scale indicated that these problems were caused by social, rather than arthritis-related, problems. The most scores in the mid range occurred with respect to the social isolation scale, so the context was important, e.g. the quality of the contact, rather than the amount, as they felt that their friends and family cared about them.

Not every measure can be used to evaluate every activity limitation, so the use of the interviews in the study helped to explain the identified problems.[22,23] The participants were aware of which activities they could not participate in because of impairment of their hand function.

Activities requiring a sustained grip are not adequately addressed when using the AIMS2-SF and assessing the functional limitations of domestic tasks like ironing, laundry, sweeping and mopping, and cutting meat and vegetables in meal preparation, are excluded.

The Wentworth community has a long history of coping with life "on the border of society", both during apartheid and post democracy.[24] Most of the participants reported that they coped with life despite their HOA, which is consistent with the literature, whereby the assumption relates to the value system of the society in which the person lives.[25] The number of women who reported that they participated in activities that distracted them is consistent with work in which it was reported that distraction was a primary way of people coping with pain.[26] The social support of the social centre and church could also explain their general life satisfaction.[27]

The primary healthcare clinic mainly distributes chronic medication to the older members of the Wentworth community. The doctor sees some of the patients, when necessary. The average attendance per clinic day is 200 elderly people. This has implications regarding diagnosis, as many of the participants had never discussed their hand symptoms with the doctor or nurse. This is a consistent with the Health Belief Model (HBM)[28] as the perceived effort in obtaining help exceeded the perceived benefit for these women. Most ascribed their HOA to growing old, which they believed could not be changed, and therefore they felt that there was no point in accessing healthcare unnecessarily. This correlates with the basic assumptions of the HBM.

The interviewed women appeared to have little confidence in medical interventions for their HOA. They seemed to trust their peers more readily with respect to information on the condition and interventions. This has implications for the implementation of National Health Insurance (NHI) as services provided to older persons will need to be more user friendly to improve uptake.

The distressing aesthetic and psychological impact reported by these women was consistent with findings in other studies,[16,29] but does not seem to have been addressed in interventions.

Participation in the life of the church, e.g. social gatherings, prayer meetings, women's groups, singing in the choir and regular praying and Bible reading, was the most widely used coping mechanism. Spiritual help from priests was sought on a regular basis, especially when the participants were not feeling well, which providing the impression of being supported. There are similar reports in the literature in this regard.[30,31]

Adaptations included not performing certain tasks and simplifying tasks, e.g. buying clothes that did not need ironing, pacing tasks and planning activities to include others. These findings concur with others.[15] Contrary to other studies, the participants in this study did not use assistive devices or seek help from health professionals. This might be because of the lack of accessible services offered in this area or as a result of negative encounters with health professionals.

## Conclusion

It is clear from the anecdotal and practice evidence that the participants in this study did not seek help for HOA as frequently as they did for arthritic conditions affecting the larger joints. This is inconsistent with the medical evidence, which, depending on the staging of the disease process, presents dysfunction as being both painful and debilitating. Based on these inconsistencies, this study sought to determine the perceptions and coping methods used by women living in a previously disadvantaged community in eThekwini Metropolitan Municipality.

The condition was not medically diagnosed within this group, and participants saw it as part of the ageing process, which competed for medical attention with more serious noncommunicable diseases. Although the participants reported functional limitations in various areas, they did not place much faith in the medical management of pain. They commonly ignored the dysfunction caused by HOA.

It is clear from the data that problems were encountered with vigorous activities which could not necessarily be ascribed to HOA, but to the ageing process, obesity, level of fitness and generalised OA. The other areas of limited function identified by the AIMS2-SF did not seem to severely affect their lives.

There is poor screening and intervention for HOA, and a lack of appreciation about its effects on general well- being. Holistic healthcare management was not accessible, nor directed to improving the lives of those living with the condition. Participants accessed spiritual and other support which compensated for therapeutic care. They reported that they just carried on with life in general.

It has been shown that, despite attempts by the Department of Health and the local authority to deliver health care to people at primary healthcare clinics, these women are being failed as their healthcare needs are not being adequately addressed. Community outreach is not offered by the therapy departments of the local district hospital because of chronic understaffing. A comprehensive community geriatric health service also does not exist.[1]

This study demonstrated that there are many gaps in the knowledge of urban-dwelling elderly women, which need to be addressed through relevant research as there is a projected increase in the number in this sector of the population. The study further identified the need to explore unarticulated issues, such as adaptations made by the women, interpretation by the service users of commonly used terms, e.g. "stiff" hands, how "ugly hands" affected function, and the expectations and satisfaction of elderly people regarding healthcare services, as these have implications for the implementation of NHI.

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