

## ATTITUDE TOWARDS THE USE OF KNEE BRACES IN THE MANAGEMENT OF KNEE OSTEOARTHRITIS AMONG PATIENTS AGED 36 YEARS AND ABOVE IN MULAGO NATIONAL REFERRAL HOSPITAL. A CROSS-SECTIONAL STUDY.

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### Abstract

#### Background

Patient's beliefs about the effectiveness and safety of medications influence their choices of medication. This study aims to explore the attitude towards the use of knee braces in the management of knee osteoarthritis among patients aged 36 years and above at Mulago National Referral Hospital.

#### Methodology

The study was descriptive, and cross-sectional employing quantitative data collection approaches from 45 respondents. It included all male and female patients who were diagnosed with knee osteoarthritis in the Orthopedic workshop.

#### Results

The majority of respondents 64.4% had a poor attitude towards the use of knee braces. 32(71.1%) felt that knee brace appearance and design influence their use, and 29(64.4%) were not satisfied with the comfort of knee braces. 29(64.4%) did not believe that they were effective while 16(35.6%) believed that braces were effective. Out of 39 respondents, 30(76.9%) felt that braces were moderately effective, 5(12.8%) thought they were very effective and 4(10.2%) thought that knee braces were not effective at all. Out of 29 would not recommend braces to others, 10(38%) would not recommend them because they were expensive, 8(32%) because knee braces are difficult to maintain, 4(15%) because knee braces were not effective, and another 4(15%) because they were bulky. By age 3(6.6%) were aged 36-45 years, 5(11.1%) were aged 41-45years, 17 (37.7%) were aged 46-50years and the most respondents were 20(44.4%) aged 51 years and above.

#### Conclusion

Patients had alarming negative attitudes towards the use of Knee braces in the management of Knee OA which is more likely to affect their adherence to Knee Braces.

#### Recommendation

There should be adequate funding for public health education through awareness campaigns on the benefits of knee braces and other new effective management options for common diseases to address attitude constraints among the public.

**Keywords:** Attitude towards the use of Knee braces, Knee osteoarthritis, Mulago National Referral Hospital.

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#### Background of the study

Patients' beliefs about the effectiveness and safety of medications influence their decision to use the medications and influence their decision to use the medication and their choices of medication (Uebelacker *et al*, 2016). Knee OA patients prefer surgical treatment more and have a negative belief about the efficacy of conservative management (Smith *et al*, 2014). In Spain, only 26.8% of the patients were satisfied with their current treatment plan for OA thereby highlighting the need for patient education programs which may have an impact on OA patients' perception of its management and the disease itself (Vitaloni *et al*, 2020). In Africa, the attitudes of Nigerians towards knee braces use reported that knee braces were perceived as beneficial in managing knee OA pain (Oyeyemi *et al*, 2019).

Patients in Tanzania have had a positive attitude towards the use of knee braces, with 91.3% of the respondents indicating that they would wear knee braces to manage their knee OA. (Mabula *et al*, 2020). Patients' attitudes towards Rehabilitation and Brace Use in Managing Knee OA in Uganda It was reported that patients with knee OA have a positive attitude towards the use of knee braces for managing knee OA (Kahangi and Dameron, 2017). There is inadequate information about the current attitude of Patients towards the use of knee braces in the management of Knee Osteoarthritis. This study aims to explore the attitude towards the use of knee braces in the management of knee osteoarthritis among patients aged 36 years and above in Mulago National Referral Hospital.

## Methodology

### Study Design

The study was descriptive, and cross-sectional employing a quantitative data collection approach. The quantitative study design was selected because of its flexibility in collecting data for the study in the shortest time possible.

### Study Area

The study was conducted in Mulago National Referral Hospital at the Orthopaedic workshop, Kampala district. The hospital serves a large population of the entire country of Uganda. The study setting was selected because it is one of the biggest orthopedic referral health facilities in Uganda with a total of 40 orthopedic health workers.

### Study population

The study included all male and female patients who were diagnosed with knee osteoarthritis aged 36 years and above and were present at the Mulago orthopedic workshop. This population was used because of the increasing cases of knee osteoarthritis among these patients at the orthopedic workshop and only those that were willing got involved in the study.

### Sample Size Determination

The sample size was determined by the Yamane formula (1967) as follows. The respondents included.

$$n = \frac{N}{1 + N(e)^2}$$

Where;

n = sample size

N = population size = 45

e = precision level (0.01)

$$\text{Therefore sample size, } n = \frac{45}{1 + 45(0.01)^2}$$

$$n = 44.7$$

n ~ 45 respondents

### Sampling Technique

A non-probability convenient sampling technique was used to select respondents that were available at the time of data collection at Mulago Workshop, for quick and easy data collection, easy access to participants, and its effectiveness.

### Sampling Procedure

The respondents were sampled on a first come first serve basis.

### Data Collection Method

Data was collected using self-administered questionnaires.

### Data collection tools

Tools included pencils, pens, and self-administered questionnaires.

### Data collection procedure

A research assistant was trained on data collection, and reading questions to the respondents. The principal researcher and research assistant explained the purpose of the study to the respondents who later had to fill out the consent form before giving them the questionnaires. The researcher assured the respondents of privacy and confidentiality. The researcher collected data by administering questionnaires to the respondents who were present at the time of data collection. After finishing filling out the questionnaires, the researcher corrected them and cross-checked them for completeness and correctness before leaving the study area.

### Definition of Variables

#### Independent variables

The independent variable for the study was the presumed cause of the dependent variable and it was the severity of knee osteoarthritis amongst patients aged 36 years and above.

#### Dependent variables

The dependent variable was the presumed effects of the independent variable. It was adherence to knee braces in the management of knee osteoarthritis amongst patients aged 36 years and above.

### Quality control

#### Reliability and validity of research instruments

The researcher pre-tested the questionnaires among patients with knee osteoarthritis at Kirudi Hospital before data collection because the facility had similar settings and handled cases like the Mulago orthopedic workshop. Data was analyzed and adjusted accordingly and questionnaires were checked for data accuracy, consistency, adequacy, quality, and completeness, and any identified mistakes were corrected.

### Inclusion criteria

All Patients aged 36 years and above with knee osteoarthritis who had used knee braces for over one month and were present in Mulago National Referral Hospital at the Orthopaedic workshop at the time of data collection and consented to participate in the study were included in the study.

### Exclusion criteria

All Patients aged 36 years and above with knee osteoarthritis who had used knee braces for over one month were present in Mulago National Referral at Orthopaedic workshop at the time of data collection and did not consent were excluded from the study.

### Data analysis and presentation

Data management was done by data editing before leaving the study area to ensure that no mistakes or areas were left

blank and if any were found, they were corrected. The questionnaires were counted to ensure that all were returned and kept in a safe place. Data collected was analyzed using Statistical Package for Social Science (SPSS) version 20 and Microsoft Excel. Quantitative data was analyzed using univalent, multivalent, and bivalent such as frequency, percentage distribution figures, and bar graphs.

An introductory letter seeking permission to carry out research was delivered to the MNRH Research and Ethics Committee. The purpose of the study was explained to the respondents and consent was obtained before giving out questionnaires and interview schedules. Each respondent was assured of privacy and confidentiality since no names were written on the interview schedule and questionnaire. Sensitive issues were explored before and a good relationship was established with the respondents.

### Ethical considerations

### Results

**Table 1: Distribution of the Socio-demographic characteristics of the respondent.**

Variable	Frequency(n=45)	Percentage%
<b>Age</b>		
36- 40	3	6.6
41- 45	5	11.1
46- 50	17	37.7
51 and above	20	44.4
<b>Gender</b>		
Female	30	66.7
Male	15	33.3
<b>Highest Education Level</b>		
None	7	15.6
Certificate	15	33.3
Diploma	10	22.2
Degree	10	22.2
Masters	3	6.7
<b>Marital status</b>		
Married	10	22.2
Single	5	11.1
Widowed	25	55.6
Divorced	5	11.1
<b>Religion</b>		
Christian	15	33.3
Muslim	25	55.6
Others	5	11.1
<b>Language spoken fluently</b>		
English	12	26.7
Luganda	15	33.3
Lusoga	6	13.3
Lunyankole	6	13.3
Other	6	13.3

*Source: Field data (2023)*

According to the findings in Table 1, out of 45 respondents who participated in the study, 30(66.7%) of the respondents were female while 15(33.3%) were male, demonstrating a female majority. The age of respondents was assessed and it was found that 3(6.6%) were aged 36-45 years, 5(11.1%) were aged 41-45years, 17 (37.7%) were aged 46-50years and most respondents were 20(44.4%) aged 51 years and above. The marital status of

the respondents was determined 10(22.2%) were married, 5(11.1%) were single, 25(55.6%) were widowed and 3(11.1%) were divorced. In terms of the highest level of education, 15(33.3%) held certificates, 10(22.2%) had diplomas, 10(22.2%) possessed degrees, and 3(6.7%) had master's degrees and 7(15.6%) had no certification. In the context of religion, the majority of the respondents were Muslims constituting 25(55.6%), followed by Christians

with 15(33.3%) and the others with 5(11.1%). The study also pointed out that the most frequently spoken language at 15(33.3%) was Luganda while 12(26.7%) spoke

English, 6(13.3%) spoke Lusoga, 6(13.3%) spoke Lunyankole, and 6(13.3%) spoke other languages.

### Attitude towards the use of Knee Braces in the management of Knee OA in MNRH.

**Table 2: Showing parameters involved in attitude towards the use of knee braces.**

Variable	Frequency (n=45)	Percentage %
<b>Does the knee brace's appearance and design influence you to use it?</b>		
Yes		
No	32	71.1
	13	28.9
<b>Are you satisfied with the comfort brought by the use of braces?</b>		
Yes	16	35.6
No	29	64.4
<b>What is your level of satisfaction with the comfort of the knee braces?</b>		
High		
Moderate	3	6.6
Low	21	46.7
Uncomfortable	5	11.1
	16	35.6
<b>Would you recommend knee braces to Others with Knee OA?</b>		
Yes	11	24.4
No	30	66.7
Not sure	4	8.9
<b>Do you believe that knee braces are effective?</b>		
Yes	16	35.6
No	29	64.4

From Table 2, more than half of the respondents 32(71.1%) felt that knee brace appearance and design influence their use and 13(28.9%) disagreed. An overwhelming number 29(64.4%) of respondents were not satisfied with the comfort of knee braces and 16(35.6%) were satisfied with it. Less than a half of the respondents 3(6.6%) had a high level of satisfaction with the comfort of knee braces, 21(46.7%) were moderately

satisfied 5(11.1%) had a low level of satisfaction and 16(35.6%) found them to be uncomfortable. More than half of the respondents 30(66.7%) would not recommend knee braces to others, 11 (24.4%) would, and 4(8.9%) were not sure. 16(35.6%) of respondents believed that braces were effective in managing their condition and 29(64.4%) did not believe that they were effective.

**Figure 1: A bar graph showing on a scale of 1-10, how effective patients believe knee braces are in managing knee OA.**

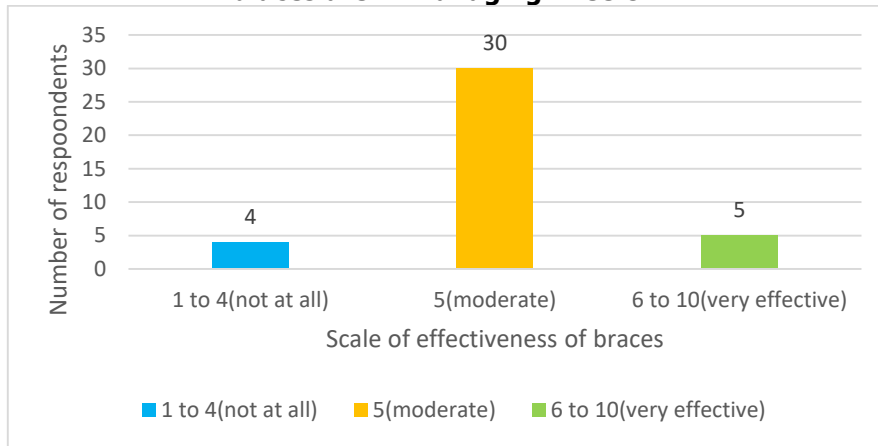


Figure 1 shows that out of 39 respondents, more than half 30(76.9%) felt that braces were moderately effective, 5(12.8%) thought they were very effective and 4(10.2%) thought that knee braces were not effective at all.

**Figure 2: A pie chart shows why the respondents would not recommend the braces to others**

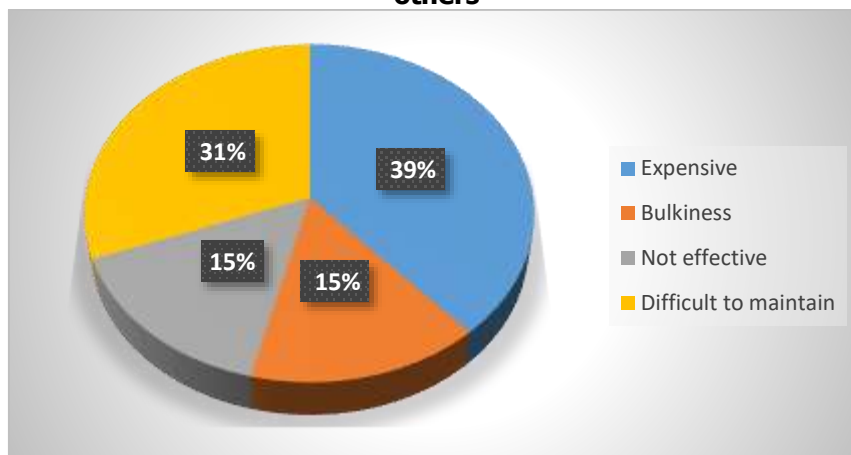


Figure 2 shows that out of 29 would not recommend braces to others, 10(38%) would not recommend them because they were expensive, 8(32%) because knee braces are difficult to maintain, 4(15%) because knee braces were not effective, and another 4(15%) because they were bulky.

### Discussion

Out of 45 respondents, an overwhelming number of the respondents 32(71.1%) felt that knee brace appearance and design influence their use whereas 13(28.9%) disagreed and this may have been so because the majority of the individuals affected are females who are always sensitive with what the put on their bodies. More than half 29(64.4%) of respondents were not satisfied with the comfort of knee braces, table 3. These results were not in agreement with the finding of Vitaloni et al which showed that only 26.8% of the patients were satisfied with their current treatment plan of OA (Vitaloni et al, 2020).

From the data obtained, only 15(35.6%) of respondents believed that braces were effective in managing their condition while 30(64.4%) did not believe that they were effective, table 3. The belief for non-effectiveness may have been due to negative experiences while using knee braces, or lack of scientific support for the effectiveness of knee braces in managing knee OA. The results are comparable to the findings of the study by Oyeyemi et al in Nigeria which reported that while knee braces were perceived as beneficial in managing knee OA pain, they were not widely used due to factors such as cost, lack of availability, and cultural beliefs (Oyeyemi et al, 2019).

The study also revealed that out of 29 would not recommend braces to others, 10(38%) would not recommend them because they were expensive, 8(32%) because knee braces are difficult to maintain, 4(15%) because knee braces were not effective, and another 4(15%) because they were bulky, chart 3. This may have been because some of these individuals have likely

experienced positive outcomes from using knee braces, such as pain relief, improved stability, or increased mobility. Their dissatisfaction with knee braces could perhaps arise from various factors, such as discomfort caused by the braces, ineffectiveness in symptom management, or the perception that knee braces are not worth the investment. This result is consistent with the findings of Smith et al who conducted a study to investigate the perceptions of people living with knee osteoarthritis towards conservative treatment and indicated that knee OA patients prefer surgical treatment more and have a negative belief about the efficacy of conservative management (Smith et al, 2014).

### Conclusion

Patients had alarming negative attitudes towards the use of Knee braces in the management of Knee OA which is more likely to affect their adherence to Knee Braces.

### Recommendation

There should be adequate funding for public health education through awareness campaigns on the benefits of knee braces and other new effective management options for common diseases to address attitude constraints among the general public.

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### List of Abbreviations

<b>ADL:</b>	Activities of Daily Living.
<b>KAM</b>	: Knee adduction moment
<b>KOA:</b>	Knee Osteoarthritis
<b>MNRH:</b>	Mulago National Referral Hospital
<b>MOH:</b>	Ministry of Health.
<b>NSAIDs:</b>	Non-Steroidal Anti –Inflammatory Drugs
<b>OA:</b>	Osteoarthritis
<b>OPD:</b>	Outpatient department
<b>QoL:</b>	Quality of life.
<b>UAHEB:</b>	Uganda Allied Health Examination Board
<b>UIAHMS:</b>	Uganda Institute of Allied Health and Management Sciences.
<b>WHO:</b>	World Health Organization

### Source of funding

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### Conflict of interest

No conflict of interest

### Author Biography


Namirembe Waldah is a diploma student in orthopedic technology at the Uganda Institute of Allied Health and Management Science –Mulago.

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