Assessment of attitudes on medication adherence among patients with epilepsy at the Kilifi Neurology Clinic, Kenya

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Background. Attitude plays a critical role in determining patient medication adherence. Medication adherence is an integral aspect of treatment and affects the effectiveness of managing epilepsy. Approximately 50 million people worldwide supper from epilepsy, with 80% of these cases in low- and middle-income countries. It is described as the most common and problematic neurological disorder. Epileptic seizures can be controlled by taking antiepileptic medication as prescribed.
Objectives. To determine the influence of attitudes on medication adherence among patients with epilepsy at the Kilifi Neurology Clinic, Kenya.
Methods. A descriptive cross-sectional study design was used. Patients with epilepsy attending the Kilifi Neurology Clinic who fulfilled the inclusion criteria were recruited to participate in the study. Attitude and adherence to treatment were evaluated using a researcher-administered questionnaire and the Morisky Medication Adherence Scale-4 (MMAS).
Results. A total of 89 patients with epilepsy participated in the study. The largest age group was <18 years, comprising 37 participants (41.6%), of whom the youngest was 7 years old and the oldest 17. Forty-seven of the patients (52.8%) were male and 42 (47.2%) were female. Perceptions of social stigma regarding their condition and its effect on medication adherence were reported as extreme by 33 of the 89 participants (37.1%). Societal misconceptions also affected medication adherence, with 46 individuals (51.7%) reporting a significant impact. The impact of personal beliefs and values on medication adherence varied among participants. The majority (n=85; 95.5%) had a low level of adherence, reflected in total MMAS scores of 3 or 4. Three participants (3.4%) had a moderate adherence level, with total scores of 1 or 2. Only one participant (1.1%) showed a high level of adherence.
Conclusion. The stigma associated with epilepsy produces shame or embarrassment, which can result in reduced health-seeking behaviour. The fear that brews from stigma can further lead patients to skip doses or stop medication completely. The role of attitude in shaping medication adherence cannot be over-emphasised. The study concluded that attitudes influence adherence to epileptic medication in this population group.

Keywords. Attitudes, medication adherence, epilepsy

Undergraduate Res Health 2025;3(2):e2877. https://doi.org/10.7196/URHJ.2025.v3i2.2877

Patient attitude refers to the mental and emotional stance that introspectively affects the patient's approach to healthcare, treatment and medical professionals. Patient attitude affects behaviour, co-operation and involvement during the provision of medical and nursing care.[1] Medication adherence is described as the patient's ability to follow prescribed medication instructions over a given period.[2] Patient-related factors have been identified as the key determinants of adherence to long-term treatment and medication.[3,4] The relationship between attitude and drug adherence determines the patient's ability to complete the drug regimen, and adherence has significant effects on patient outcomes. The benefits of drug adherence can be identified as preventing disease complications, improved health outcomes, cost saving, better quality of life, patient satisfaction and reduced drug resistance.[4,5]

Epilepsy affects around 50 million people worldwide, and 80% of these cases are in low- and middle-income countries. It is described as the most common and problematic neurological disorder. Epileptic seizures can be controlled by adhering to prescribed antiepileptic medication. Failure to take the prescribed regimen results in treatment failure and recurrence of seizures.

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A study in Pakistan to assess perceptions and experiences of patients with hypertension found that patients had specific unrealistic attitudes concerning their long-term medications, and that these affected their adherence.[6] Similarly, a study by Rosa *et al.*[7] on the correlation

between medication adherence and lithium treatment attitudes and knowledge found that patient attitude is directly correlated with treatment adherence. A study in the UK by Chapman *et al.*[8] found that non-adherence to antiepileptic medicines was related to patient attitudes, while a study by Bozek *et al.*[9] identified negative attitudes to medication substitutions done at pharmacies among Polish patients with epilepsy. Similarly, a study in Sweden on patient attitudes to generic antiseizure drugs also found negative attitudes towards generic drug substitutions.[10] Positive attitude plays a critical part in determining drug adherence, especially when long-term treatment is required, as in epilepsy. The central role played by healthcare providers in creating a positive attitude through training and retraining could improve both attitude and patient adherence.[11]

Regionally, a study in Ethiopia by Kassie *et al.*[12] to determine attitudes of patients on epilepsy medication found that the majority of the patients had a positive attitude towards their medication, which improved adherence tremendously. Similarly, a study by Musekwa *et al.*[13] found that a negative attitude towards epilepsy negatively affected patients' adherence, while a study by Elsayed *et al.*[14] in Sudan also determined that adherence was affected by attitude towards epileptic drugs; furthermore, there was a significant relationship between adherence and side-effects. The relationship between attitude and adherence is further supported by a study in Ethiopia, which identified patients' psychological mindset as a significant factor in determining the consistency of epilepsy treatment adherence,[15] and a study in Tanzania, which found that negative attitudes and perceptions affected adherence to epilepsy medication.[16] The majority of the work on epilepsy management in a Kenyan context demonstrates adherence levels only.

In Kenya, there is a paucity of research on attitude and drug adherence in epilepsy. Our research serves to add to the literature by providing evidence on the role of attitude in medication adherence.

Methods

The research employed a descriptive cross-sectional study design and was conducted at the Kilifi Neurology Clinic in Kenya. The clinic is under the Kenya Medical Research Institute (KEMRI) Neuroscience Department, providing services such as epilepsy consultation, treatment and follow-up, and clinical care for patients with neurological and neurodevelopmental disorders. Consensus sampling was used to select participants for the study. This sampling method involved selecting individuals who met specific criteria as they became available during the data collection period. Data were analysed using SPSS version 22 (IBM, USA).

Ethical considerations

Approval to conduct the research was sought from the Kenya Methodist University Nursing Department (approval ref. no. KMSA/ND 3500). Informed consent was obtained from all the patients who agreed to participate in the study. The patients were not required to present any identifying data, and confidentiality was maintained by assigning codes to the questionnaires. Respondents were free to withdraw from the study at any time without fear of victimisation. Privacy was upheld during data collection to ensure that participants felt comfortable answering potentially personal questions.

Results

Response rate

A total of 89 respondents participated in the study, representing a 100% recruitment rate. This high rate can probably be attributed to clear instructions and positive personal interactions, which encouraged participants to complete the questionnaires.

Age and gender

The age distribution varied significantly among the participants (Table 1). The largest age group was <18 years, comprising 37 participants (41.6%). The youngest of these was 7 years old, and the oldest 17. Participants aged ≥65 or older also constituted a substantial proportion of the total (*n*=34; 38.2%). The estimated mean age was 36.5 years, and the median 23.8 years.

Of the 89 respondents, 47 (52.8%) were male and 42 (47.2%) female (Fig. 1).

Education level

Education levels among participants ranged from no formal education to postgraduate qualifications (Table 2). Most had completed primary (*n*= 22; 24.7%) or secondary education (*n*=25; 28.1%). Smaller proportions had attained tertiary education, including college (*n*=8; 9.0%), university (*n*=9; 10.1%), or postgraduate qualifications (*n*=18; 20.2%), while a few had no formal education (*n*=7; 7.9%)

Table 1. Age distribution of participants (*N*=89)

Age group (years)	*n* (%)
<18	37 (41.6)
18 - 24	9 (10.1)
25 - 34	5 (5.6)
45 - 54	4 (4.5)
≥65	34 (38.2)

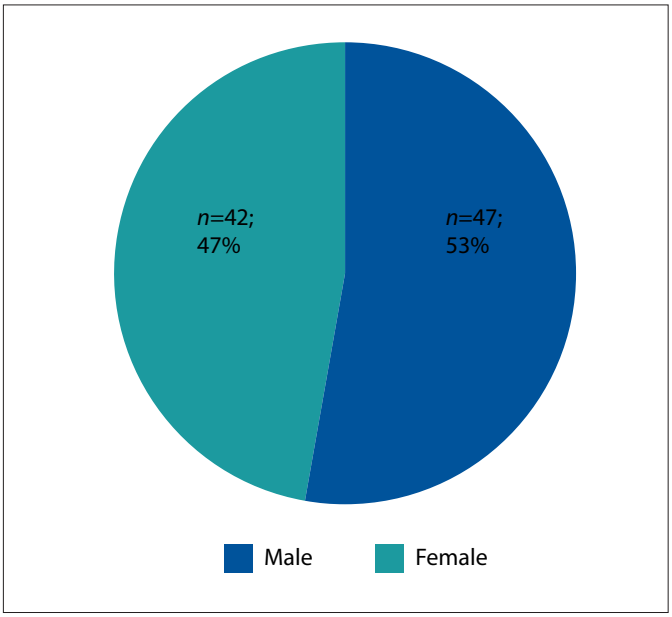

Fig. 1. Gender distribution of the patients in the study.

Perception of social stigma and medication adherence

Of the 89 participants, 33 (37.1%) perceived social stigma regarding their condition and its effect on medication adherence as extreme, 31 (34.8%) as significant, and 25 (28.1%) as moderate (Table 3).

Impact of societal misconceptions on medication adherence

The participants indicated that societal misconceptions affected their medication adherence, with 46 (51.7%) reporting a significant impact, 31 (34.8%) an extreme impact, and 12 (13.5%) a moderate impact (Table 4). The mean of 2.21 (on a scale of 1 - 3) indicates that the average perceived impact was between significant and extreme.

Impact of personal beliefs and values on medication adherence

The impact of personal beliefs and values on medication adherence varied among the participants, 17 (19.1%) reporting a strongly positive impact, 31 (34.8%) a moderately positive impact, 20 (22.5%) a neutral impact, 11 (12.4%) a moderately negative impact, and 10 (11.2%) a strongly negative impact (Table 5). The mean score of 0.382 indicates a slightly positive influence of personal beliefs and values on medication adherence.

Morisky Medication Adherence Scale

The majority of the participants (*n*=85; 95.5%), demonstrated a low level of adherence, reflected in total MMAS scores of 3 or 4 (Table 6). Three participants (3.4%) had moderate adherence, with total scores of 1 or 2. Only one participant (1.1%) had a high adherence level, with a total score of 0. The significant prevalence of non-adherence, observed in 95.5% of the sample with total MMAS scores of 3 or 4, is consistent with similar studies that have reported challenges in maintaining consistent medication adherence among patient populations. The identification of a small subset of participants (3.4%) demonstrating moderate adherence, with MMAS scores of 1 or 2, reflects a pattern seen in other studies as well. While this group has better adherence compared with the majority, their adherence levels still fall short of optimal, indicating ongoing challenges in medication management. Similarly, the presence of a single participant (1.1%) exhibiting high adherence, with a perfect score of 0 on the MMAS, indicates that there are individuals within patient populations who demonstrate exemplary adherence practices.

Table 2. Education level of participants (*N*=89)

Education level	*n* (%)
No education	7 (7.9)
Primary	22 (24.7)
Secondary	25 (28.1)
College	8 (9.0)
University	9 (10.1)
Postgraduate	18 (20.2)

Table 3. Perception of social stigma and its effect on medication adherence (*N*=89)

Response	*n* (%)
Extreme	33 (37.1)
Significant	31 (34.8)
Moderate	25 (28.1)

Table 4. Impact of societal misconceptions on medication adherence (*N*=89)

Response	*n* (%)
Moderate	12 (13.5)
Significant	46 (51.7)
Extreme	31 (34.8)

Discussion

The high number of respondents (*N*=89) and the 100% response rate could be attributed to clear instructions and positive personal interactions, which encouraged participants to complete the questionnaires. With regard to age distribution, most respondents were in the oldest and youngest spectrums (<18 and ≥65 years old). These findings differ from those in Hasiso and Desse's[17] study on adherence, in which most patients were aged 18 - 66 years.

There were slightly more male than female participants in the present study. This is similar to the finding of Hasiso and Desse[17] that 56.2% of their total respondents were male, while in a study by Yang *et al.*,[18] 51.9% of the 3 955 participants were male. Most of the participants in the present study had secondary school education, followed by primary school and postgraduate education.

Social stigma

Many patients (37.1%) felt that social stigma affected them and their ability to adhere to medications to an extreme extent, while 34.8% felt that it affected them significantly and 28.1% that it affected them moderately.

The seizures that are a symptom of epilepsy can be misinterpreted and misunderstood, transforming the condition from a clinical issue to a social stigma. The psychosocial burden carried by patients with epilepsy is immense, and affects their ability to adhere to medications.[18] Secondary

Table 5. Impact of personal beliefs and values on medication adherence (*N*=89)

Response	*n* (%)
Strongly positive	17 (19.1)
Moderately positive	31 (34.8)
Neutral	20 (22.5)
Moderately negative	11 (12.4)
Strongly negative	10 (11.2)

Table 6. Morisky Medication Adherence Scale-4 (*N*=89)

Adherence level	*n* (%)
High (score 0)	1 (1.1)
Moderate (score 1 - 2)	3 (3.4)
Low (score 3 - 4)	85 (95.5)

factors such as low levels of education, age, disease duration and lack of social support further exacerbate the psychosocial problems.[18,19] Stigmatised patients tend to isolate themselves further, affecting their ability to adhere to medications, compounding difficulties in their disease management, and leading to more frequent seizures with detrimental effects.

Chesaniuk *et al.*[20] have described an information-motivation-behavioural skills model that is useful in understanding the links between perceived stigma and medication adherence (Fig. 2).

Advanced epilepsy-related stigma is associated with lower medication adherence, and higher perceived epilepsy-related stigma with lower levels of motivation, information and behavioural skills.[18-20]

Societal misconceptions

Societal misconceptions of epilepsy affected medication adherence in our study, with 46 individuals (51.7%) reporting a significant impact, 31 (34.8%) an extreme impact, and 12 (13.5%) a moderate impact. These findings indicate the potential consequences of societal misconceptions for epilepsy patients and their medication adherence. A study by Osungbade and Siyanbade[21] found that societal misconceptions of the disease affected treatment outcomes, some people attributing the illness to demonic possession or witchcraft, or making fun of an individual with epilepsy. Lack of knowledge on epilepsy management and inconsistent beliefs in society resulted in individuals with epilepsy being prevented from accessing medications, and relatives endorsing traditional medicine, exorcism, charms and sacrificial offerings as opposed to conventional medications. These findings are similar to those of Rani and Thomas,[22] who identified the critical role played by societal misconceptions in the treatment adherence of patients with epilepsy. This study assessed the effect of parental misconceptions. Parents with negative misconceptions influence patients' resolve to adhere to their medications. Societal misconceptions surrounding epilepsy are the main barrier to medication adherence.[21-23] When widely accepted and firmly believed, they affect medication adherence and further lead to isolation and eventually undesired patient outcomes.

Personal beliefs and values

In the present study, 17 individuals (19.1%) reported a strongly positive impact of their personal beliefs and values on medication adherence, 31 (34.8%) a moderately positive impact, 20 (22.5%) a neutral impact, 11 (12.4%) a moderately negative impact, and 10 (11.2%) a strongly negative impact. Patients' personal beliefs and values influence their ability to adhere to medications. Positive personal beliefs and values have been shown to result in medication adherence.[23,24] Notably, patient belief systems regarding disease, its cause and its treatment significantly influence adherence levels.[24] Strong personal beliefs that medications for treating epilepsy were harmful have been associated with lower levels of adherence to the medication regimen.[21-23]

Study limitations

The data were collected exclusively from patients attending the Kilifi Neurology Clinic. As a result, information on individuals with epilepsy who did not attend this clinic was not captured in the study. Some patients may have chosen not to visit the Neurology Clinic and instead received treatment at the main hospital. Additionally, the study utilised information provided by parents or guardians as well as by patients themselves, which may be subject to recall bias and could affect the accuracy of the findings.

Conclusion

Epilepsy is often misunderstood, with many communities linking it to demonic possession and witchcraft. This stigma leads to shame or embarrassment, resulting in decreased health-seeking ability. The fear that brews from stigma further leads patients to skip or stop medication. The role of attitude in shaping medication adherence cannot be over-emphasised. The majority of the patients in this study had a low MMAS score, indicating poor adherence to medication. Poor adherence is worrying, especially with epilepsy, as it affects the health outcomes of the patients. The study concluded that attitudes influence adherence to epileptic medication. Negative feelings can take root and influence personal beliefs. The intersection of social stigma, misconceptions and personal beliefs affects patients' willingness to follow prescribed regimens. Psychosocial stigma alienates the patient, who feels isolated and abandoned; this leads to scepticism about effectiveness of treatment and hence poor adherence. Societal misconceptions further influence patients, who may come to believe that medication is unnecessary or harmful, so they discontinue conventional medication, perhaps changing to herbal remedies.

Addressing the root cause of these challenges requires education of communities on epilepsy, its management and the importance of medication adherence.

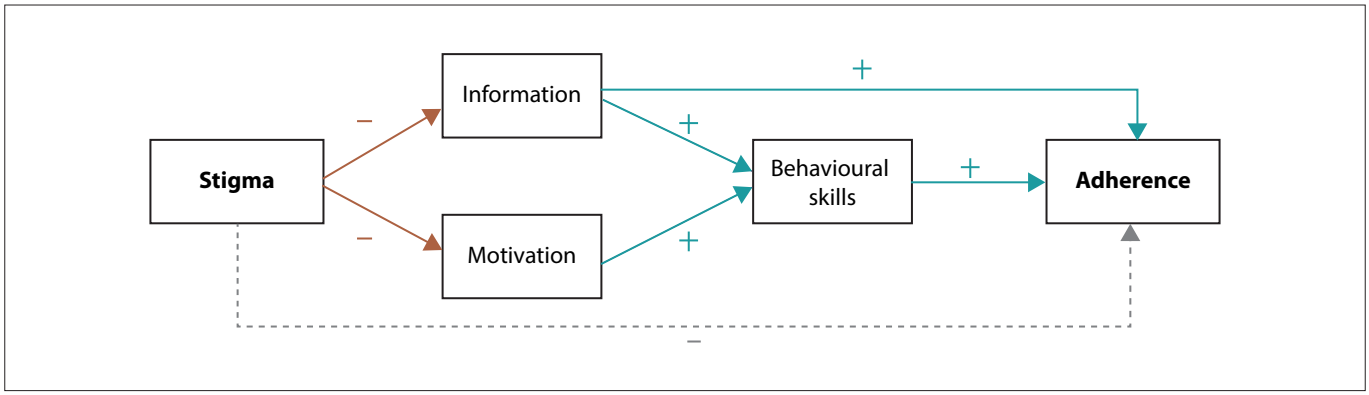

Fig. 2. Information-motivation-behavioural skills model.[20]

Declaration. The research for this study was done by MMw in partial fulfilment of the requirements for the BSN degree at Kenya Methodist University.

Acknowledgements. The authors thank the Kilifi Neurology Clinic.

AI declaration. The authors acknowledge the journal policy on the use of AI, and the requirement to disclose the use of any AI tools in manuscript preparation. No AI tools were used.

Author contributions. MMw conceptualised the study and supervised the research. PK was responsible for supervision and correcting, and MMu for overseeing the workflow and reviewing the final draft.

Funding. None.

Data availability statement. The data sets generated and analysed during the current study are available from the corresponding author (MMu) upon reasonable request.

Conflicts of interest. None.

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Received 1 February 2025. Accepted 5 August 2025.