Awareness and Attitudes of Pharmacists in the Use of Guidelines in the Management of Heart Failure in Nigeria

Abstract

BackgroundPharmacist involvement in medication reconciliation and transitions of care in high-risk HF patients has become gold standard. The pharmacist is to provide patient education and assess for improper medication use at every visit. Knowledge of the attitude and awareness of heart failure guidelines among pharmacists will aid the delivery of effective interventions to prevent disease progression and control cardiovascular complications among these patients. The study points out the awareness and attitudes of pharmacists towards guideline adherence in the management of heart failure patients in southern, Nigeria.

Methods: A survey was conducted among 320 pharmacists, yielding a response rate of 68.75%. Demographic characteristics, guideline awareness, frequency of reference, access sources, perceptions, and challenges were analyzed.

Results: Pharmacists exhibited heterogeneous demographics, with varied experience (1-5 years: 50.00%), education (B Pharm: 59.09%), and practice areas (clinical pharmacy: 48.18%). While 75.00% were aware of heart failure guidelines, 61.36% referenced AHA/ACC/HFSA guidelines most frequently. Access was diverse, including national/international websites and professional journals. Positive attitudes towards guideline-mediated management were prevalent (relevant: 79.54%), though barriers such as lack of awareness (50.00%) and time constraints (25.00%) were noted. Perceived adequacy of guidelines in addressing challenges was divided (confident: 50.00%, uncertain: 43.18%, skeptical: 6.82%).

Conclusion: Nigerian pharmacists demonstrated awareness and positive attitudes towards heart failure guidelines, yet face barriers to adherence. Tailored interventions such as inclusivity of the Nigerian pharmacists in the decision-making societies and other interventions are warranted to enhance guideline utilization and optimize patient outcomes**.**

KEYWORDS; pharmacists, guidelines, heart failure, perception, attitudes, awareness, Nigeria.

INTRODUCTION

Heart failure is a significant contributor to the burden of non-communicable diseases in developing countries like Nigeria which is experiencing epidemiological and demographic transition.(1) The incidence and prevalence rates of heart failure have increased worldwide, both in developed and developing countries, particularly with the increasing aging in various populations.(2) In sub-Saharan Africa, the mortality rates from cardiovascular diseases are likely to remain low but even here they are almost equal to the mortality rates from infectious and parasitic diseases.(3,4) In Nigeria, hypertension and rheumatic heart disease are high on the list of causes of heart failure.(3)This prevalence continues to rise, emphasizing the importance of prevention and management, as 5-year mortality rate remains at around 50%. The lifetime risk of HF is 30% to 42% in white males and 20% to 29% in black males. Declining mortality rates have been attributed to evidence-based treatment approaches.(5) There is a relationship between high-quality care and improved patient outcomes particularly when the care is from specially trained providers.(6) New agents to target heart failure have been discovered since the last update to the guidelines in 2017.(7) Health system pharmacists play a significant role in heart failure management, helping to decrease hospital readmission rates via appropriate drug selection and patient counseling.(8)Pharmacists can make a considerable impact in controlling cardiovascular disease risk factors.(4) Health professionals including Pharmacists play a key role; inpatient education, in modifying the attitude, and in raising awareness of blood pressure control,(5) it is preferred to prevent the occurrence of the disease when possible. Management of diseases that are known to be causative of HF should be prioritized. Some of the most causative risk factors for HF include hypertension, diabetes mellitus, metabolic syndrome, and atherosclerotic disease.(9) One study showed a lower lifetime risk of HF in patients who followed the AHA's Life's Simple 7 guidelines(10) which includes;stopping smoking,eating better,getting active,losing weight,managing blood pressure,controlling cholesterol, and reducing blood sugar.(11) Guideline-based treatment of HF is determined based on the ACCF/AHA stage of HF, type of HF, and NYHA functional class.(8) Based on these stages, management focuses on risk reduction or evidence-based management of underlying causes or guideline-driven management and therapy (GDMT) for comorbid conditions or advanced treatment strategies and procedures to manage fluid balance, transplantation, and end-of-life care(5)for the stages A,B,C, and D respectively(5).

Since the update to the guideline in 2017, data showing HF benefits for several other agents has been released. Several of the Sodium-Glucose Cotransporter- 2

Inhibitors (SGLT-2Is) have been shown to decrease HF hospitalizations, with various trials to confirm this discovery including the DAPA-HF trial,(12) CANVAS trial,(13) CREDENCE trial,(14) DECLARE-TIMI 58 trial,(15) EMPA-REG OUTCOME trial(16) and VICTORIA trial.(17)Recent increases in new therapies constitute poor adherence thereby increasing readmission and mortality. As former Surgeon General C. Everett Koop put it, "Drugs don't work in patients who don't take them" Adherence not only constitutes the medication but self-care recommendations as well.(18)A lack of these can lead to readmission thereby increasing mortality risk. This introduces the importance and impact of the pharmacist.(19)

Studies consistently show that a pharmacist-member of a HF team improves the outcome of the patient.(20–22) Pharmacists are uniquely positioned to participate in medication reconciliation to help prevent medication duplications or omissions, avoid the use of medications that could lead to HF exacerbations or drug interactions, and assess the use of complementary alternative medicine (CAM) that may not otherwise be addressed.(23–25) As HF patients are on many medications, they are at risk for duplication of therapy, drug interactions, and adverse drug reactions that could lead to readmission or increased hospital stay. Pharmacist involvement in medication reconciliation and transitions of care in high-risk HF patients is becoming the standard.(26)The pharmacist is to provide patient education and assess for improper medication use at every visit. such as nonsteroidal anti-inflammatory drugs or calcium channel blockers, which could exacerbate HF. They ensure medications are being titrated to GDMT target dosing, assess for adverse drug reactions, and evaluate any OTC medications or CAM that the patient may be taking to ensure appropriateness. The goal of this is to avoid HF exacerbations. Along with patient monitoring and GDMT recommendations, pharmacists can bring awareness to new HF treatments, educate patients and providers, and contribute to transitions of care, including medication reconciliation and post-discharge follow-up.(27)

Recent studies have shown gaps in the attitude and adherence to management guidelines of cardiovascular diseases among health workers.(28) Knowledge of the attitude and awareness of heart failure guidelines among pharmacists will aid the delivery of effective interventions to prevent disease progression and control cardiovascular complications among these patients. Accordingly, we assessed the knowledge, attitude, and awareness of heart failure management guidelines among pharmacists in southern Nigeria.

METHODS

A cross-sectional prospective study was conducted in January 2024 among pharmacists in Port Harcourt; located in the southern part of Nigeria, the administrative capital of Rivers State. The study randomly targeted 320 registered pharmacists in Rivers during the period. Knowledge, awareness, and attitude of participants to the use of heart failure guidelineswere assessed using a structured questionnaire.

The survey questionnaire was designed to gather quantitative data on pharmacists' awareness and attitudes regarding the use of guidelines in the management of heart failure (HF) in Nigeria. The questionnaire consisted of multiple-choice questions, Likert scale items, and demographic inquiries. The first section consisted of demographic information, such as age, gender, years of experience, area of practice, and educational qualification. The second section assessed the knowledge and awareness of guidelines in the management of heart failure, it included 3 multiple-choice questions and 1 sub-objective question. The third section assessed the attitudes toward Guidelines in Heart Failure Management, with 2 objective questions. The completed questionnaire alongside a cover letter, which described the aim of the study as well as assuring a voluntary nature and anonymity was sent to participants via direct message through professional networks. SPSS was used to statistically analyze the quantitative data derived from the survey including descriptive statistics such as mean and frequencies to identify the relationships between variables. Ethical principles were observed in the study as participants gave their informed consent and confidentiality was maintained together with data security measures.

RESULTS

The survey focused on 320 pharmacists in Nigeria to understand their awareness and attitudes towards the use of guidelines in the management of heart failure patients and received a (220) 68.75% response rate. Demographic features among the respondents were heterogeneous as various years of experience, highest educational qualification,and area of practice were noted. There was random distribution and sampling with different gender represented as females were 56.82% and males were 43.18%. 13.54% of subjects were under 25 years of age, 50.00% were in the age range of 25-34 years, 18.18% were 35-44 years, 11.36% were 45-54 years and 6.82% were 55 years and above.15.91% had less than 1 year of experience,1-5 years of experience 50.00%, 6-10 years of experience 15.91%, and 18.18% of pharmacists are greater than 10 years. Of the 220 respondents,

59.09% had a bachelor of pharmacy degree (B PHARM) as their highest educational qualification, 22.73% had a doctor of pharmacy degree (PHARM D), 11/36% had a doctorate and 6.82% had a master's degree as their highest educational qualification.48.18% of pharmacists practiced as clinical pharmacists, 32.73% were community pharmacists, 16.82% were regulatory pharmacists and 2.27% were industrial pharmacists.

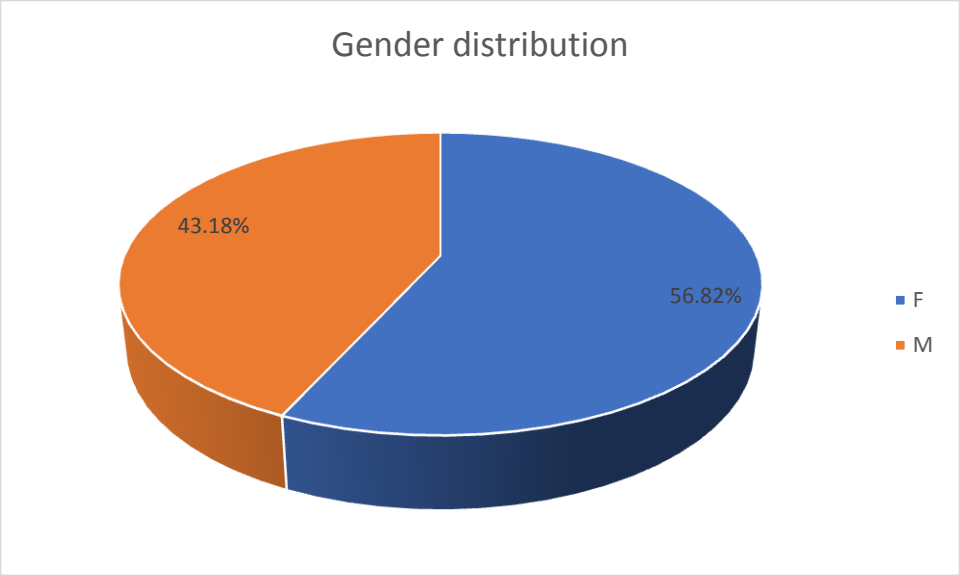

Figure 1: Gender Distribution (F=Female; M=Male)

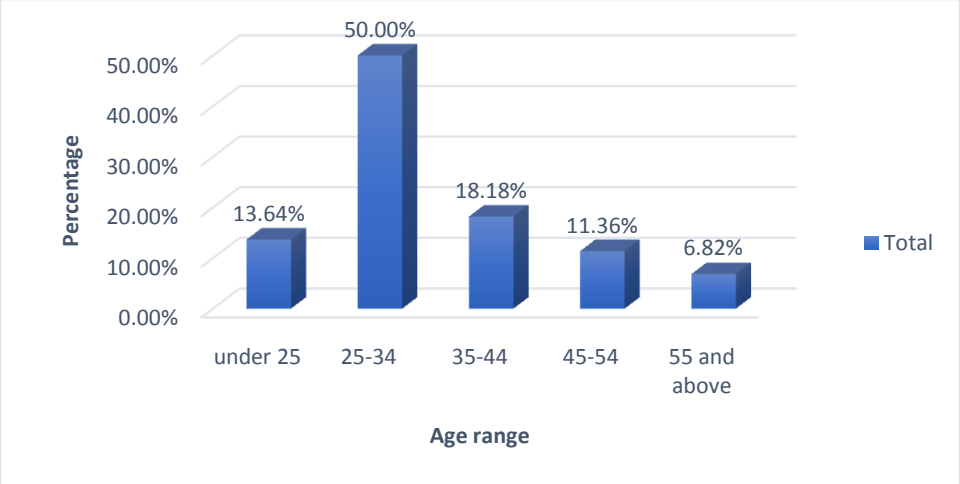

Figure 2: Age Distribution

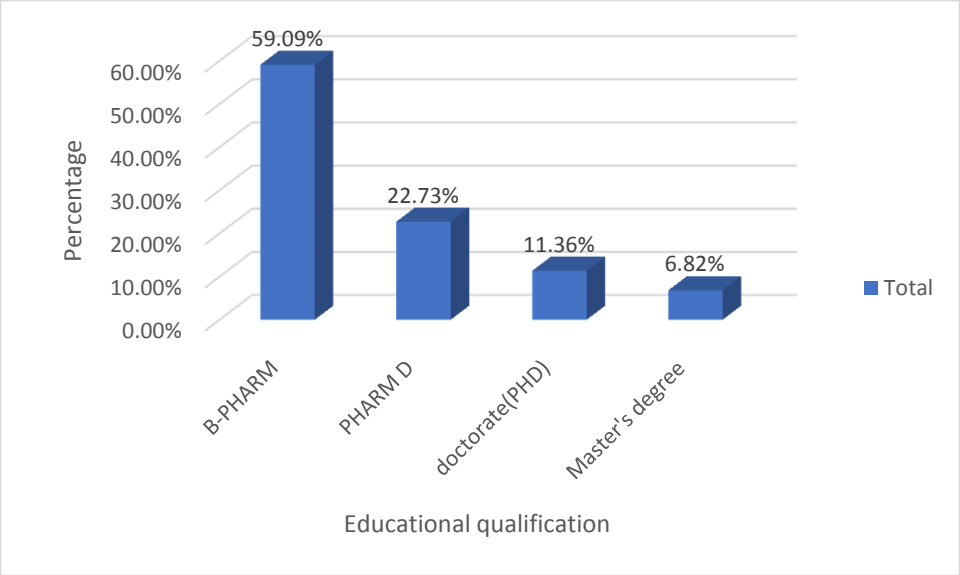

Figure 3: Highest Educational Qualification

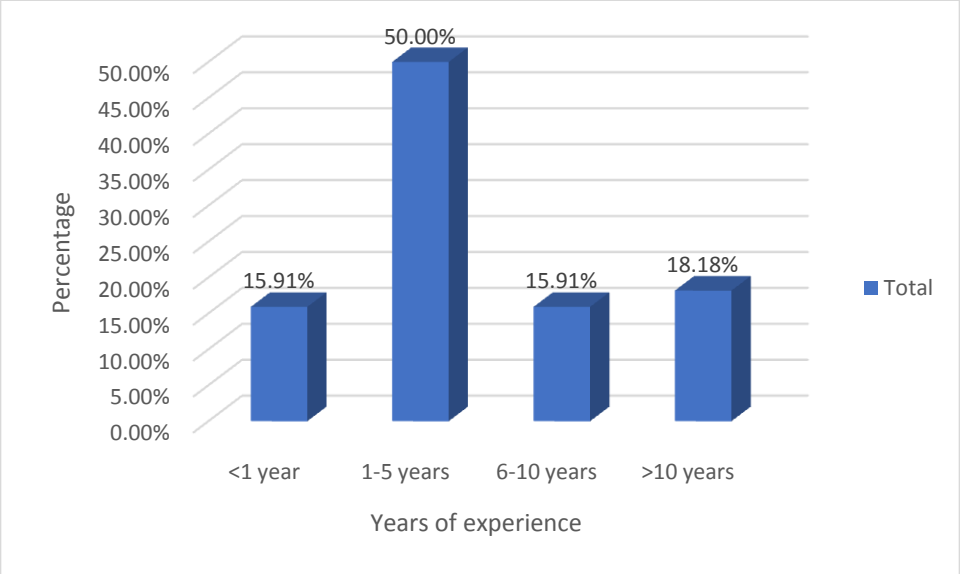

Figure 4: Years of Experience

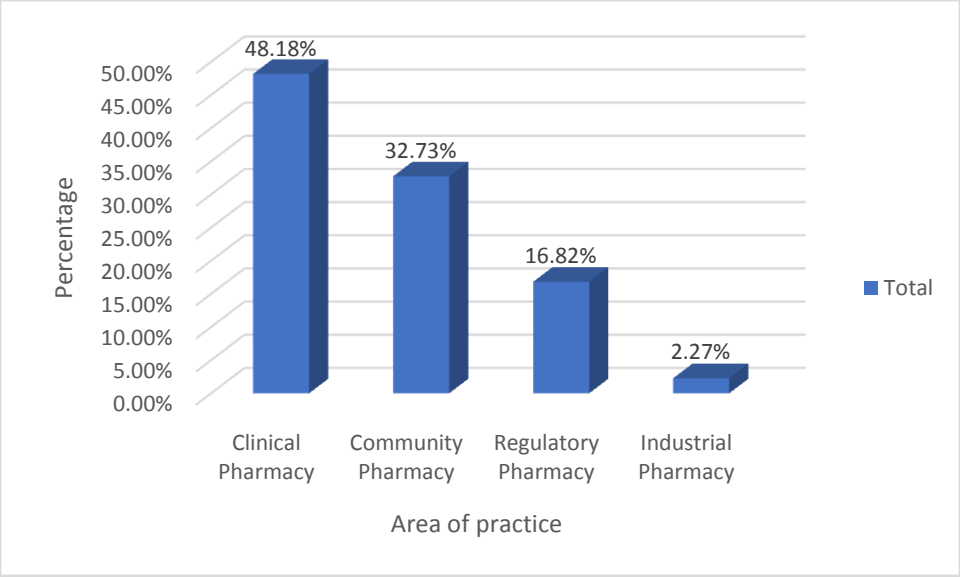

Figure 5: Areas of Practice

Awareness of Guidelines in Heart Failure Management

Almost all pharmacists claimed to be aware of the existing guidelines for the management of heart failure patients. 75.00% of pharmacists were aware of these guidelines. 61.36% pharmacists referred to American Heart Association/American College of Cardiology/Heart Failure Society of America (AHA/ACC/HFSA) guideline, 27.27% pharmacists referredto European Society of Cardiology/European Society of Hypertension(ESC/ESH) guidelines,6.82% pharmacists referred to the Eight Joint National Committee on Prevention, Detection, Evaluation, and treatment(JNC-8) guideline, 2.27% pharmacists referred to Canadian Cardiovascular Society (CCS) guideline and 2.27% pharmacists referred to InternationalSociety of Heart and Lungs Transplantation (ISHLT) guideline. The frequency of reference or use of these guidelines by the pharmacists was also represented, as 4.55% of pharmacists never referred to these guidelines while managing heart failure patients, 31.82%of pharmacists rarely referred to these guidelines, 25.00% referred to them daily, 22.73% weekly and 15.91% monthly. The subjects accessed these guidelines via the following sources; National healthcare organizations' websites, international healthcare organizations' websites, pharmaceutical companies' resources, Professional journals, and Continuing education programs.

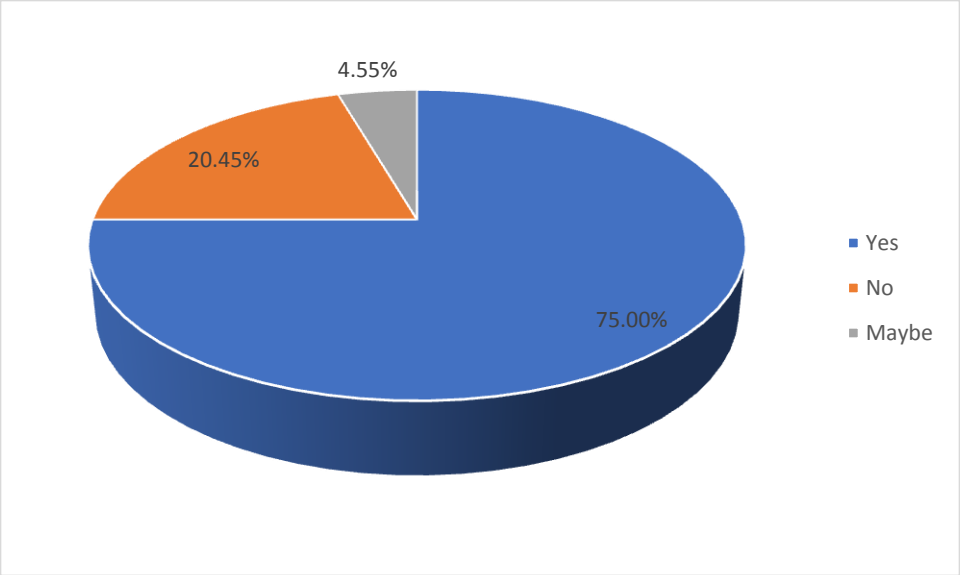

Figure 6: Awareness of Existing Guidelines in The Management of Heart Failure.

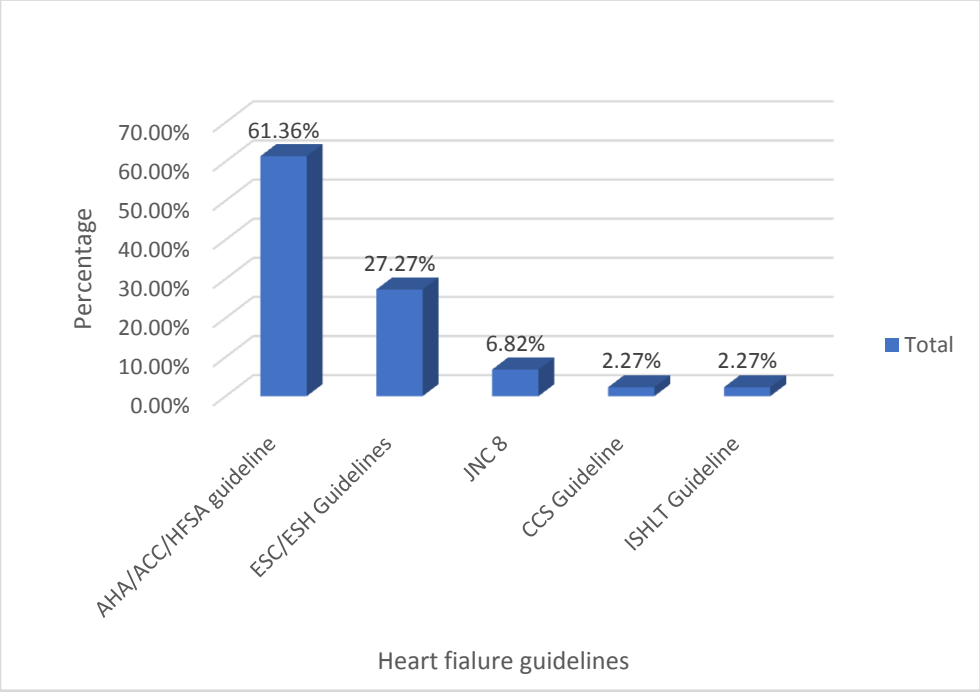

Figure 7: Awareness of Different Guidelines

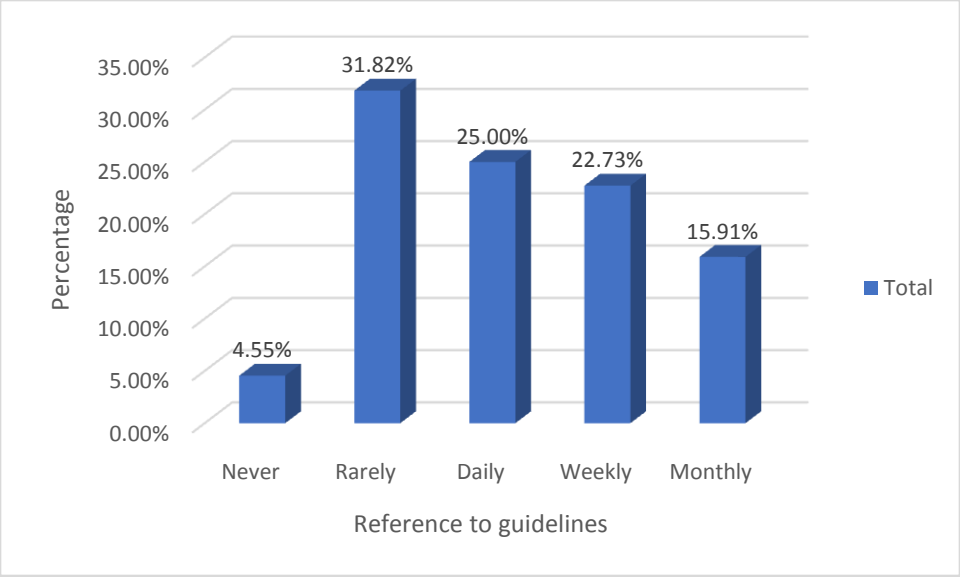

Figure 8: Frequency of Referral to Guideline

Attitudes Towards Guidelines in Heart Failure Management

The perception and attitude towards the improvement of patient outcomes in the use of guideline-mediated management and therapy (GDMT) in heart failure were very relevant and relevant to 43.18% and 36.36% of pharmacists respectively. While 20.45% of pharmacists were neutral towards the guidelines reference in heart failure management. The perceived barriers faced by these professionals in adhering to the use of these guidelines include; lack of awareness of guidelines, limited access to guidelines, lack of time to personally review guidelines, difficulty in understanding guidelines, presence of conflicting guidelines,and lack of recognition for guideline adherence. Although 50.00% of pharmacists believe that these guidelines adequately address the challenges faced in heart failure management in Nigeria, 43.18% of pharmacists are uncertain about the adequacy of these guidelines in addressing the challenges faced in heart failure management in Nigeria and 6.82% do not believe that these guidelines carefully and adequately managed heart failure in Nigeria.

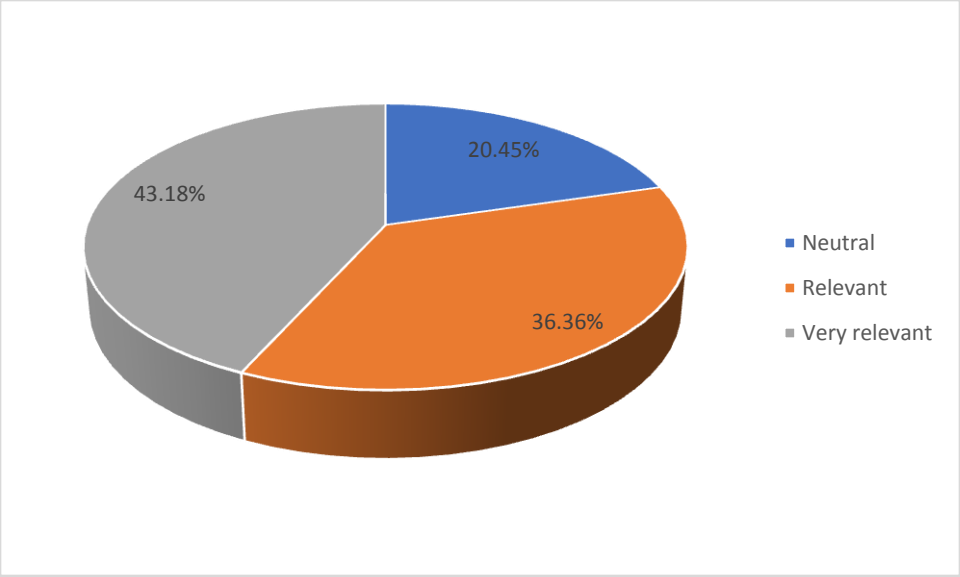

Figure 9: Perception of Relevance of Guidelines to Heart Failure Patients in Nigeria

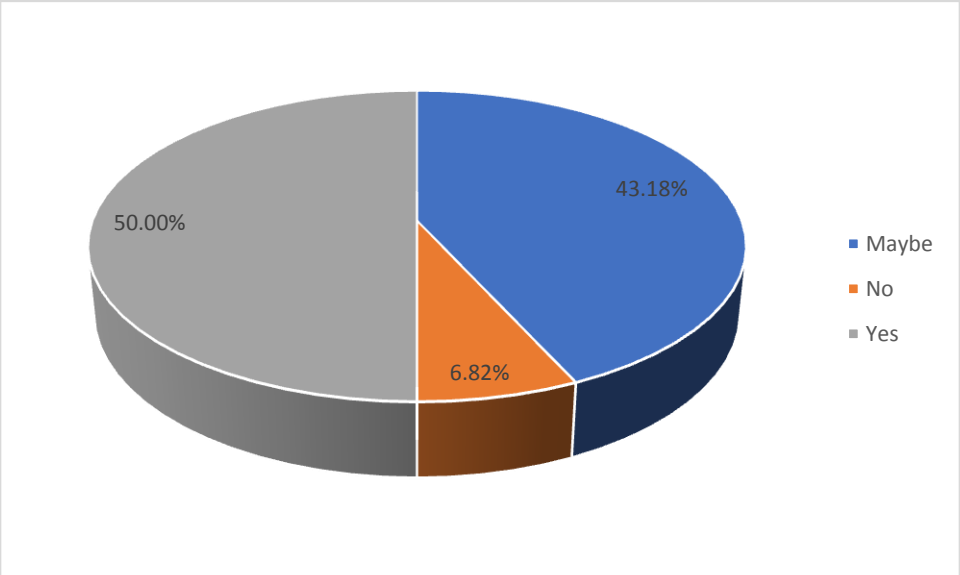

Figure 10: Perception of Pharmacists to the Adequacy of Addressing Challenges Faced in Heart Failure Management Nigeria by these Existing Guidelines

DISCUSSION

Awareness and attitudes of pharmacists in the use of guidelines in the management of heart failure in Nigeria offers various eye-opening facts into the perceptions and practices of pharmacists concerning the application of guidelines in the management of heart failure patients. Thesample of 320 pharmacists across Nigeria, achieved a response rate of 68.75%.

Gender distribution was balanced, with 56.82% female and 43.18% male respondents (fig 1). Age distribution revealed that the majority of participants were within the age range of 25-34 years (50.00%), followed by 35-44 years (18.18%), showing that the majority of the subjects were young adults (fig 2). Experience levels varied (fig 4), with a significant proportion (50.00%) possessing 1-5 years of experience, while 15.91% had less than 1 year and 18.18% had over 10 years of experience. Educational qualifications (fig 3) were diverse, with 59.09% holding a Bachelor of Pharmacy degree (B Pharm) and 22.73% holding a Doctor of Pharmacy degree (Pharm D), indicating a mix of entry-level and advanced academic backgrounds. In terms of practice areas, clinical pharmacy emerged as the predominant field (48.18%), followed by community pharmacy (32.73%), reflectinga blend of clinical and community-focused roles within the profession (fig 5).

The widespread awareness among pharmacists regarding existing guidelines for heart failure management, with 75.00% of respondents acknowledging their awareness was significant (fig 6). Notably, the American HeartAssociation/American College of Cardiology/Heart Failure Society of America (AHA/ACC/HFSA) Guideline was the most frequently referenced (61.36%), followed by The European Society of Cardiology/European Society of Hypertension (ESC/ESH) Guideline (27.27%) (fig 7).

The influence of international guidelines in shaping clinical practice among Nigerian pharmacists was notable.Despite high awareness levels, the frequency of guideline reference varied (fig 8), with 4.55% of pharmacists never referring to guidelines, while 25.00% referenced them daily. A greater number of pharmacists rarely referred to these managements as well. This points out a wide range of engagement with guidelines, influenced by factors such as workload and familiarity with guideline content. It was also attributed to the various factors including; the inclusivity of the Nigerian pharmacists in the heart failure team or society for which these guidelines are deliberated on, in agreement with some

studies(21,27,29). In addition, guidelines particularly directed to Africans or Nigerians will boost the authenticity of information first-hand and improve the use of these guidelines which are locally tailored. Also, the use of other management types such as evidence-based management which could become part of these newly tailored guidelines is preferred to the GDMT.(30) This implies that more pharmacists will likely refer to guidelines tailored or targeted solely to Africans or Nigerians. The sources of guideline access were diverse, including national and international healthcare organization websites, pharmaceutical company resources, professional journals, and continuing education programs, highlighting the multifaceted nature of knowledge acquisition within the pharmacy profession.

The pharmacists' perceptions and attitudes towards guideline-mediated management and therapy (GDMT) in heart failure showed a significant proportion of pharmacists (79.54%) expressed a positive stance towards the potential of guidelines to improve patient outcomes, with 43.18% deeming it very relevant and 36.36% relevant (fig 9). However, a notable minority (20.45%) remained neutral, indicating a degree of ambivalence towards guideline adherence.

Perceived barriers to guideline adherence were identified, including lack of awareness, limited access, time constraints, comprehension difficulties, conflicting guidelines, and insufficient recognition for adherence. These barriers highlight systemic challenges that may impede effective guideline implementation within Nigerian healthcare.

Furthermore, different opinions exist regarding the adequacy of guidelines in addressing challenges specific to heart failure management in Nigeria (fig 10). While half of the pharmacists (50.00%) expressed confidence in the guidelines' ability to address these challenges, a substantial portion (43.18%) remained uncertain, and a minority (6.82%) expressed skepticism. Therefore, pronouncesthe need for ongoing evaluation and adaptation of guidelines to align with local healthcare contexts and challenges.

Some other factors that would considerably contribute to the successfulimplementation of guidelines in practice include; clear communication and sensitization of guidelines to professionals, regular monitoring and feedback on adherence to guidelines, collaboration and individualized guideline therapy, and finally alignment of guidelines with evidence-based practices.

CONCLUSION

The challenges discovered in this study pronounce the need for ongoing evaluation and adaptation of guidelines to align with local healthcare contexts and challenges.Prompt action must be taken to take into consideration all necessary cultural or localized factors that may influence patient attitudes and behaviors toward heart failure management. Addressing all challenges and barriers to accessing healthcare services and adapting the guidelines to accommodate limited resources and infrastructure in some regions of Nigeria

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