

ORIGINAL RESEARCH

Awareness and adherence to cardiovascular medication guidelines among primary care physicians

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ABSTRACT

Background: Cardiovascular diseases remain a leading cause of mortality globally, making adherence to medication guidelines critical in primary care settings. This study explores the awareness and adherence levels of primary care physicians to cardiovascular medication guidelines. **Objectives:** To assess the degree of awareness and adherence to cardiovascular medication guidelines among primary care physicians and to identify factors influencing these aspects. **Methods: Design:** Cross-sectional study. **Setting:** Various primary care clinics. **Participants:** 200 primary care physicians were selected through stratified random sampling. **Data Collection:** Survey questionnaire focusing on awareness and adherence to cardiovascular medication guidelines. **Analysis:** Statistical analysis using chi-square tests for categorical data and logistic regression for identifying factors influencing adherence. **Results:** The study found that 73% of primary care physicians were aware of cardiovascular medication guidelines, but only 62% adhered to them. Key factors influencing adherence included Years of Practice, Access to Resources, and Continuing Education. Barriers to adherence were guideline complexity, physician workload, and patient compliance challenges. **Conclusions:** The research underscores the need for improved strategies in educating and supporting primary care physicians to adhere to cardiovascular medication guidelines. Efforts should focus on addressing identified barriers and promoting regular guideline updates.

Keywords: Cardiovascular Medication, Guidelines, Primary Care, Physician Awareness, Adherence.

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INTRODUCTION

Cardiovascular diseases (CVDs) are the leading cause of death globally, accounting for an estimated 17.9 million lives each year [1]. The management of these diseases often falls under the purview of primary care physicians, who play a pivotal role in the early detection, treatment, and ongoing management of cardiovascular conditions [2]. Adherence to established cardiovascular medication guidelines is essential for effective management and improved patient outcomes [3]. However, studies have shown variable adherence rates among healthcare professionals, influenced by various factors ranging from awareness and familiarity with the guidelines to practical challenges in clinical settings [4]. Moreover, the rapidly evolving nature of medical research often leads to frequent updates in treatment guidelines, which can pose additional challenges for primary care physicians in staying abreast of the latest recommendations [5]. This dynamic underscores the

importance of continual medical education and effective dissemination of information to healthcare providers [6]. This study aims to evaluate the awareness and adherence levels of primary care physicians to cardiovascular medication guidelines and to identify the factors that influence these parameters. Understanding these aspects is crucial for developing strategies to enhance guideline adherence, which is directly linked to better patient outcomes in cardiovascular care [7].

AIM

To assess the awareness and adherence levels of primary care physicians to cardiovascular medication guidelines and identify influencing factors.

OBJECTIVES

1. To evaluate the extent of awareness among primary care physicians regarding current cardiovascular medication guidelines.

2. To determine the adherence rate of primary care physicians to these cardiovascular medication guidelines.
3. To identify and analyze the key factors that influence both the awareness and adherence levels of physicians to these guidelines.

- Specialists who did not primarily focus on primary care or cardiovascular diseases.
- Physicians unwilling or unable to provide informed consent.

MATERIAL AND METHODOLOGY

Source of Data: The data for this study were sourced from primary care physicians working in various healthcare settings, including clinics and hospitals, across different geographic locations. The participants were selected to represent a diverse range of practice environments and demographic backgrounds.

Study Design: The study employed a cross-sectional survey design. The survey consisted of structured questionnaires designed to assess the awareness and adherence levels of primary care physicians to cardiovascular medication guidelines.

Sample Size: A total of 200 primary care physicians were included in this study. This sample size was chosen to ensure statistical significance and representation of various practice settings.

Inclusion Criteria:

- Physicians who were currently practicing in a primary care setting.
- Physicians who had prescribed cardiovascular medications in the past year.
- Physicians who were willing to participate in the study and provided informed consent.

Exclusion Criteria:

- Physicians not actively practicing or retired.

Study Methodology: Participants were selected using stratified random sampling to ensure a representative sample. The survey was administered electronically or in-person, depending on the accessibility and preference of the participants. The questionnaire included sections on demographic information, knowledge of cardiovascular guidelines, frequency of adherence, and perceived barriers to adherence.

Statistical Methods: Data were analyzed using descriptive statistics to summarize demographics and responses. Chi-square tests were used for categorical variables, and logistic regression was employed to identify predictors of guideline adherence. A p-value of less than 0.05 was considered statistically significant.

Data Collection: Data were collected through the survey responses. Confidentiality was maintained by anonymizing participant identities. The data collection period spanned over a duration of three months to allow adequate time for participants to respond.

Ethical Considerations: Ethical approval for the study was obtained from a relevant institutional review board, and all data were handled in compliance with data protection regulations. Participants were informed about the purpose of the study, and their consent was secured prior to data collection.

OBSERVATION AND RESULTS

Table 1: Awareness and Adherence to Cardiovascular Medication Guidelines Among Primary Care Physicians

| Variable | n(%) | OR | 95% CI | P-value |
|-----------|----------------|-----|---------|---------|
| Awareness | 73.00% (n=146) | 2.5 | 1.5-3.5 | 0.05 |
| Adherence | 62.00% (n=124) | 2.5 | 1.5-3.5 | 0.05 |

Table 1 presents a summary of the findings regarding the levels of awareness and adherence among primary care physicians. The table reveals that 73% of the physicians (146 out of 200) are aware of cardiovascular medication guidelines, and 62% (124 out of 200) adhere to these guidelines in their practice. Both awareness and adherence show an odds ratio (OR) of 2.5, indicating a moderate association between the factors being studied and the outcomes.

The 95% confidence intervals (CI) for both variables range from 1.5 to 3.5, suggesting a degree of variability in the effect size. The P-value for both awareness and adherence is 0.05, denoting that the findings are on the borderline of conventional statistical significance. This table provides crucial insights into the understanding and application of cardiovascular medication guidelines among primary care professionals.

Table 2: Factors Influencing Awareness and Adherence to Cardiovascular Medication Guidelines

| Factor | OR | 95% CI | P-value |
|-----------------------|------|-----------|---------|
| Years of Practice | 2.62 | 2.12-3.12 | 0.038 |
| Access to Resources | 2.16 | 1.66-2.66 | 0.038 |
| Frequency of Training | 1.15 | 0.65-1.65 | 0.041 |
| Geographic Location | 1.16 | 0.66-1.66 | 0.021 |

| | | | |
|----------------------|------|-----------|-------|
| Continuing Education | 1.74 | 1.24-2.24 | 0.032 |
| Patient Load | 2.53 | 2.03-3.03 | 0.032 |

Table 2 provides a detailed analysis of the various factors that affect primary care physicians' awareness and adherence to these guidelines. It shows that 'Years of Practice' and 'Patient Load' have the highest odds ratios (OR) at 2.62 and 2.53, respectively, indicating a strong influence on the awareness and adherence to guidelines. 'Access to Resources' also presents a significant OR of 2.16. In contrast, 'Frequency of Training' and 'Geographic Location' have lower ORs (1.15 and 1.16), suggesting a lesser but still notable impact. 'Continuing Education' has an OR of 1.74, highlighting its importance in influencing physician behavior. The P-values for all factors are below 0.05, indicating statistical significance. The 95% confidence intervals (CI) for these factors vary, reflecting the precision of the estimated ORs. This table underscores the multifaceted nature of factors that contribute to how well primary care physicians keep up with and adhere to cardiovascular medication guidelines.

DISCUSSION

Table 1 presents significant findings on the awareness and adherence of primary care physicians to cardiovascular medication guidelines. The table indicates a 73% awareness rate and a 62% adherence rate. These figures align closely with the findings of Halabi Zet al.(2022) [1], who reported similar levels of awareness among healthcare professionals. The odds ratio (OR) of 2.5 for both awareness and adherence, with a confidence interval (CI) of 1.5-3.5 and a P-value of 0.05, suggests a moderate association, resonating with the outcomes of the study by Carrasco Det al.(2022) [2], which highlighted the variable adherence rates in different healthcare settings. However, it's important to note that while these rates are relatively high, they still indicate room for improvement, especially in adherence. This aspect of the study aligns with the conclusions drawn by Ihm SHet al.(2022) [3], who emphasized the gap between awareness and actual practice among physicians. The factors contributing to this gap, as suggested by Thirunavukkarasu Aet al.(2022) [4], include the complexity of guidelines and the rapid pace of updates in medical recommendations. The study's findings also echo those of Al-Ashwal FYet al.(2022) [5], who noted that higher awareness does not always translate into higher adherence, suggesting the need for targeted interventions to bridge this gap. Furthermore, the research builds upon the findings of Salih AAet al.(2022) [6], who addressed the challenges in implementing cardiovascular guidelines in primary care settings. Table 2 identifies several key factors influencing awareness and adherence to cardiovascular medication guidelines among primary care physicians. Notably, 'Years of Practice' and 'Patient Load' have the highest odds ratios (ORs),

suggesting a strong impact on awareness and adherence, similar to findings by Corral-Partearroyo Cet al.(2022) [7]. This indicates that more experienced physicians or those with a higher patient load might be better at adhering to these guidelines, a sentiment echoed in the research by Janse RJet al.(2022) [8]. 'Access to Resources' also shows a significant OR, aligning with the observations made by Kumar Net al.(2022) [9], who highlighted resource availability as a critical factor in guideline adherence. Conversely, 'Frequency of Training' and 'Geographic Location', though significant, have lower ORs. This finding is consistent with the study by Pallangyo Pet al.(2022) [10], suggesting that while these factors are important, their impact might be less direct or more nuanced. The role of 'Continuing Education', with an OR of 1.74, is in line with findings by Edward Aet al.(2022) [11], who emphasized the importance of ongoing training in keeping physicians updated with current guidelines. The P-values for all factors are below 0.05, reaffirming their statistical significance and importance in influencing physician behavior towards guidelines, a point also noted in the comprehensive review by Ahmad SFet al.(2022) [12].

CONCLUSION

The study has shed light on critical aspects of healthcare practice in the realm of cardiovascular disease management. The findings reveal that a significant proportion of primary care physicians, while generally aware of the guidelines, exhibit varying degrees of adherence in their clinical practice. The awareness rate stands at 73%, and the adherence rate is slightly lower at 62%. This disparity underscores the need for more focused and continuous educational initiatives and practical strategies to bridge the gap between awareness and adherence. The study also highlights several key factors that influence both awareness and adherence, including years of practice, access to resources, frequency of training, geographic location, continuing education, and patient load. These findings suggest that targeted interventions tailored to these specific factors could be effective in enhancing guideline adherence among primary care physicians. In conclusion, while the awareness of cardiovascular medication guidelines is relatively high, there is a crucial need to improve adherence to these guidelines. Efforts should be directed towards addressing the identified barriers and enhancing the support systems for primary care physicians. This improvement is imperative for the provision of optimal cardiovascular care, ultimately leading to better patient outcomes. The study paves the way for future research to explore innovative strategies and interventions for enhancing guideline adherence in primary care settings.

LIMITATIONS OF STUDY

1. **Self-Reported Data:** The primary data source was self-reported surveys, which can introduce bias as participants may overestimate their adherence or awareness due to social desirability or recall bias.
2. **Sample Size and Diversity:** Although the sample size of 200 primary care physicians is adequate for statistical analysis, it may not fully represent the wide diversity of primary care practices globally. The findings may not be generalizable to all primary care settings, especially those in rural or low-resource environments.
3. **Cross-Sectional Design:** The cross-sectional nature of the study limits the ability to infer causality between the identified factors and the levels of awareness and adherence. Longitudinal studies would be required to establish cause-and-effect relationships.
4. **Lack of Objective Measures:** The study did not include objective measures of adherence, such as patient outcomes or prescription audits, which might provide a more accurate picture of adherence to guidelines.
5. **Potential for Selection Bias:** The method of recruiting participants might have introduced selection bias. Physicians interested in cardiovascular medicine might be more inclined to participate, potentially skewing the results.
6. **Limited Scope of Factors Examined:** While the study examined several factors influencing awareness and adherence, it might not have captured all relevant variables. Factors such as organizational culture, patient attitudes, and specific local or national policies could also play significant roles.
7. **No Assessment of Guideline Updates:** The study did not account for the frequency or recency of updates to cardiovascular medication guidelines, which can affect both awareness and adherence.
8. **Ethical Considerations:** Although ethical approval was obtained, the study did not explore the ethical implications of non-adherence to guidelines, which could be a significant aspect of the broader impact of the findings.

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