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Adherence of healthcare providers and Midwifery on the Implementation of Clinical Practice Guidelines in primary healthcare settings: facilitators and barriers at KSA

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ABSTRACT

Background: Clinical practice guidelines (CPGs) are essential tools designed to standardize care, improve patient outcomes, and promote evidence-based practices in healthcare. Adherence to these guidelines is particularly critical in primary health care settings, where diverse conditions, including chronic diseases and maternal health needs, are managed. Despite their importance, variations in adherence and implementation persist, often due to barriers such as insufficient training, resource limitations, and systemic challenges, highlighting the need for further investigation**.**

Aim of the study:assess the level of CPG adherence of among healthcare providers and midwifery in primary health care settings in this country and identify the related barriers.

Methods: Cross sectional, descriptive research design was utilized to conduct this research at It was conducted at 10primary healthcare settings , at Jeddah at Saudia Arabia ;

Subjects:300 participants were assigned conveniently to participate in this research out of 789 healthcare providers and midwifery selected they were classified into general practitioner, Family physician consultant, Family physician specialist, Nurses, Midwifery, and Nursing technicians. They inclusion criteria was having at least 1-yearexperience and welling to participate in the research.

Results: The majority of participants (98.0%) acknowledged using CPGs in their everyday practices. The high implementation rates of guidelines for diabetes (91.3%), hypertension (81.2%), and hyperlipidemia (69.8%) suggest that healthcare providers prioritize chronic disease management, which might reflect the burden of these conditions in the population. Table 2 shows that guidelines for postnatal care (38.9%) and women's screening (45.6%) were the least implemented. According to Table 2, the top two reasons for following CPGs were their evidence-based nature (79.2%) and their coverage of common clinical scenarios (43.6%). In addition, Table 4 findings indicate that most healthcare providers and midwives are receptive to CPGs and find them practical to implement, reflecting high adherence potential. However, the desire for further learning emphasizes a critical barrier that must be addressed to improve adherence across all guideline areas. Tailored training programs, especially in underserved areas like women's health, could help bridge these gaps and enhance overall CPG implementation in primary healthcare settings.

Conclusion: This study highlights a high level of adherence to clinical practice guidelines (CPGs) among healthcare providers and midwifery in primary health care settings, particularly in managing chronic conditions such as diabetes, hypertension, and hyperlipidemia. However, gaps in adherence were observed in areas like postnatal care and women's health screening, indicating the need for targeted efforts to address these deficiencies.

Keywords: practice, primary, outcomes, CPGs

INTRODUCTION

Clinical practice guidelines (CPG) are evidence-based recommendations that help healthcare professionals and patients choose the best diagnostic and treatment options for a specific ailment. Although CPG implementation has not been fully demonstrated to improve health outcomes, health professionals recognize the need of evidence-based clinical treatment and recognize CPG as a valuable tool for translating scientific data into practice.2,3 Although family doctors believe in evidence-based practice, current healthcare assessments show inconsistent clinical decisions and little adherence to CPG guidelines.4

Various factors may impact CPG implementation. Factors like as professional behavior and attitudes, patient characteristics, the professional-patient relationship, the organizational context, the guideline itself, and the surrounding environment can either hinder or facilitate implementation.1,6-10 A comprehensive review found that multiple interventions are more effective than solitary ones in evaluating the effectiveness of CPG implementation strategies.

CPG is a popular management strategy in Saudi Arabia's Jeddah region for improving primary care quality and efficiency. Although there are few published reports on their impact, CPGs are commonly employed in service contracts between public regional purchasers and healthcare providers in the region. This guideline covers managing and preventing chronic and acute diseases, providing preventive care for healthy individuals, and prescribing medications. Primary care providers use pay-for-performance plans to delegate responsibility for meeting target objectives to family doctors and nurses.11,12

Furthermore, Respectful maternity care (RMC) refers to providing mothers with polite and honorable treatment or services in health facilities.1 This attitude to women prioritizes individualism and human rights. This approach to obstetric care prioritizes kindness, dignity, confidentiality, non-discrimination, women-centeredness, and non-criminality throughout the care process.2 Providing universal access to safe, acceptable, and high-quality sexual and reproductive health care, particularly for mothers, can help reduce and avoid maternal death worldwide.3RMC supports human rights by implementing initiatives such as voluntary maternal healthcare that uphold these rights.

General practitioners have financial incentives for prescribing medications from a restricted list. A quality indicator scoreboard is used to accurately assess the work of family practitioners. Data is obtained through audits of computerized registries and drug prescribing processes.13-15 Initially, aim objectives were focused on quality of care metrics. However, due to financial challenges, a cost-containment approach has been implemented.16,17 Previously, drug prescription targets were related to following a recommended list of drug goods. Primary care teams already have a limited annual prescription budget. Our care strategy has evolved from "soft management" to "hard management."18

A research in China found that just 11.3% of primary care general practitioners (GPs) routinely used CPGs, whereas 8% did not use them despite being aware of them.5 Non-compliance was attributed to a lack of guidelines, training, awareness, and regular updates.5A qualitative survey of GPs in Norway found limited adherence to recommendations, despite their importance in practicing evidence-based medicine.6 The causes cited were guideline overload, inaccessible and long recommendations, and a mismatch between guidelines and patient demands.6 In a qualitative study of 27 GPs in South Africa, time restrictions, limited financial resources, and healthcare system organization were identified as important hurdles to the already overburdened primary care system.7

In the Netherlands, GPs had a 77% perceived adherence rate to national guidelines, differing by guideline. The observed hurdles were primarily connected to patient choices, needs, and capacities, as well as the inapplicability of some guidelines.8A Saudi Arabian survey found high (88.5%) CPG adherence among family , healthcare providers and midwifery in Riyadh city.Access to CPGs and 'autonomy' were the primary reasons cited. The key challenges identified were inadequate leadership support, awareness, and knowledge.9

Significant of the study

Disrespect and abuse (D&A) of service-seeking women is a pressing issue that requires global attention from stakeholders in health care research, education, human rights, and activism.5 COVID-19, a global pandemic, is putting a strain on healthcare systems.6,7 The pandemic caused fear, confusion, and irritation among healthcare staff, hindering their capacity to follow evidence-based protocols for providing RMC. Abuse and mistreatment of women during childbirth, such as lack of knowledge, denial or suspension of care, neglect, abandonment, and abuse, continue to be a global issue.8. In addition, Primary care , healthcare providers and midwifery (PCPs) are crucial in managing chronic diseases since they are the primary point of contact for patients seeking care. So, Complying with CPGs helps reduce needless services and improve patient satisfaction.4 Globally, primary healthcare services have low compliance rates.

Currently, no study has been undertaken in Saudi Arabia on the adherence and challenges to CPG adoption among healthcare providers and midwives in primary care settings. We aimed to evaluate the level of CPG adherence among healthcare providers and midwives in primary health care settings in this country and identify associated impediments.This study's findings can help decisionmakers better understand healthcare providers' demands and improve the effectiveness of guidelines for optimal implementation.

Aim of the study

assess the level of CPG adherence ofamong healthcare providers and midwifery in primary health care settings in this country and identify the related barriers.

Methods

Research design: Cross sectional, descriptive research design was utilized to conduct this research.

Settings: It was conducted at 10 primary healthcare settings (The Western Region is home to ten (10) family medicine clinics, including the National Guard Training Center, Baharah clinics, Madinah clinics, Sharaie clinics, Um Alsalam clinics, Jazan clinics, Yanbu clinics, King Faisal residential city clinics (KFRCC)-Jeddah, and King Khalid residential city clinics (KKRCC)-Taif clinics.) , at Jeddah at Saudia Arabia ;

Subjects: 300 participant were assigned conveniently to participate in this research out of 789 healthcare providers and midwifery selected. they were classified into general practitioner, Family physician consultant, Family physician specialist, Nurses, Midwifery, and Nursing technicians .They inclusion criteria was having at least 1 year experience, and welling to participate in the research

Instrument: A three-part questionnaire was developed based on existing literature.

Part 1 collected participant demographics and adherence to recommendations.Part 2 examined the hurdles and facilitators evaluation instrument, while Section 3 inquired about additional challenges and facilitators for implementing CPGs. The questionnaire and consent form were distributed to all participants in the pre-selected 10 PHCs.

Data collection: Information gathering: During the study period, the researcher created a self-administered English questionnaire14 to gather the following data: Profile of sociodemographic characteristics, such as age, sex, education, years of experience working in family health facilities, and particular training programs in family medical centers about referral schemes Accreditation and facilities.

Validity and reliability: The tool's validity was confirmed by two separate linguists who first translated it forward into Arabic and then backward into English. The concept was then examined for relevance and content translation by a group of ten public health specialists. the scale-content validity index (S-CVI/Ave) = 0.88, and the scale-content validity index/universal agreement (S-CVI/UA) = 0.77 were used to measure the content validity.. This suggests a high degree of content validity. Cronbach's alpha was used to assess the tool's internal consistency and reliability. The tool used in this investigation had a Cronbach's alpha of 0.780.

Statistical Analysis: Data analysis was conducted using the Statis tical Package for Social Sciences [27] version 27. A P-value of less than 0.05 was considered statistically significant. Descriptive statistics were used to summarize the data, with means and standard deviations for the outcome variables (total personal burnout score, total work-related burnout score, and total EHR-related burnout score) and frequencies and percentages for the independent variables. Normality tests using skewness and kurtosis criteria indicated that the outcome variables were normally distributed [28]. Bivariate analyses, including Analysis of Variance (ANOVA) and independent samples T-tests, were conducted to identify the variables influencing healthcare providers' burnout.

RESULTS

Table 1 show that Family physician consultants and family physician specialists together represent the majority of healthcare providers, accounting for 42% (22% and 20%, respectively). General practitioners make up 13.33%, while nurses contribute significantly with 21.66%.Midwifery and nursing technicians form a smaller portion of the workforce, at 8% and 15%, respectively. The workforce is predominantly female, accounting for 78.33%, while males represent only 21.66%. This indicates a strong female presence in this primary care setting.Most of the workforce are Saudi nationals (83.33%), while non-Saudis comprise 16.66%. This suggests a localized workforce with a smaller contribution from expatriates. A large majority (73.66%) have received formal training on clinical practice guidelines, indicating a high level of exposure to standardized practices. However, 26.33% lack such training, highlighting a potential area for improvement in workforce education.

Those with 0–5 years of experience form the largest group (29.5%), suggesting a significant presence of early-career professionals. 6–10 years (18.8%) and 11–15 years (22.1%) groups show a steady contribution of mid-career professionals. More experienced groups, with 16–20 years (12.1%) and >20 years (17.4%), represent a smaller but substantial segment, indicating the presence of seasoned professionals.

Table 1 presented the sociodemographic data of the study participants:

Items	No (%)
Role in primary care	
Family physician consultant	66 (22)
Family physician specialist	60 (20)
General practitioner	40 (13.33)
Nurses	65(21.66)
Midwifery	24(8)
Nursing technicians	45(15)
Gender	
Male	65 (21.66)
Female	235 (78.333)
Nationality	
Saudi	250 (83.33)
Non-Saudi	50 (16.66)
Receiving formal training about clinical practice guideline	
Yes	221 (73.66)
No	79 (26.33)
Working experience, years	
0–5	88 (29.5)
6–10	56 (18.8)
11–15	66 (22.1)
16–20	36 (12.1)
> 20	52 (17.4)

Table 2 pointed that The majority of participants (98.0%) acknowledged using CPGs in their everyday practices. The guidelines for diabetes (91.3%), hypertension (81.2%), and hyperlipidemia (69.8%) were the most widely implemented. Table 2 shows that guidelines for postnatal care (38.9%) and women's screening (45.6%) were the least implemented. According to Table 2, the top two reasons for following CPGs were their evidence-based nature (79.2%) and their coverage of common clinical scenarios (43.6%).

This indicated that the fact that 98% of participants use CPGs indicates widespread adherence among healthcare providers. This aligns with the study's aim of understanding the current level of compliance.The high implementation rates of guidelines for diabetes (91.3%), hypertension (81.2%), and hyperlipidemia (69.8%) suggest that healthcare providers prioritize chronic disease management, which might reflect the burden of these conditions in the population. The lower adherence rates for postnatal care (38.9%) and women's screening (45.6%) highlight gaps in CPG implementation. This suggests potential barriers such as insufficient training, lack of resources, or differing perceptions of the importance of these guidelines, particularly for midwifery and women's health services.he primary reasons for following CPGs—their evidence-based nature (79.2%) and coverage of common clinical scenarios (43.6%)—highlight the importance of making guidelines both reliable and applicable to everyday practice. These factors contribute to high adherence but also imply that guidelines may need to address underserved areas like postnatal and women's health more effectively.

Table 2: level of adherence to implementation of clinical practice guideline

Details	Adherence level, n (%)
Overall implementation	292 (98.0)
Guidelines	
Diabetes mellitus	272 (91.3)
Hypertension	242 (81.2)
Hyperlipidemia	208 (69.8)
Bronchial asthma	180 (59.7)
Antenatal care	170 (57.0)
Thyroid disease	154 (51.7)
Child screening	152 (51.0)
Preventive care screening	142 (47.7)
Women prenatal screening	136(45.6)
Postnatal care	116 (38.9)
Reasons for implementing guidelines	
Evidence-based guideline	236 (79.2)
Address most clinical scenarios seen in my daily practice	130 (43.6)

Obligated by our institution/ department head	94 (31.5)
Easy layout and user friendly	86 (28.9)
Recommended by a colleague	30 (10.1)

Table 3 showed that Gender was found to be a major predictor of specific guidelines implementation among participants. Male , healthcare providers and midwifery were more likely to follow guidelines for hypertension and bronchial asthma than female , healthcare providers and midwifery ($p < 0.040$ and $p < 0.017$, respectively), while female , healthcare providers and midwifery implemented better guidelines for antenatal care, postnatal care, and child and women screening ($p < 0.05$) (Table 3).Formal training has a major impact on implementing preventive care, prenatal and postnatal care standards, and screening for children and women. Participants in the family physician residency program were more likely to follow these criteria ($p < 0.05$) (Table 3).

Table 3: the difference of adherence to clinical practice guideline according to their training

Trainings	**Gender**			**Level of formal training**		
	Male (%)	**Female (%)**	**p-value**	**Receiving training (%)**	**Not receiving training (%)**	**p-value**
Preventive care screening						
Yes	37.5	50.4	0.194	53.7	25.0	0.008
No	62.5	49.6		46.3	75.0	
Diabetes mellitus						
Yes	90.6	91.5	1.000	90.1	91.7	0.417
No	9.4	8.5		(9.9)	(8.3)	
Hypertension						
Yes	93.8	77.8	0.040	78.5	100	0.152
No	6.3	22.2		21.5	0.0	
Hyperlipidemia						
Yes	81.3	66.7	0.111	66.9	83.3	0.286
No	18.7	33.3		33.1	16.7	
Thyroid disease						
Yes	53.1	51.3	0.853	51.2	58.3	0.887
No	46.9	48.7		48.8	41.7	
Bronchial asthma						
Yes	78.1	54.7	0.017	57.0	66.7	0.340
No	21.9	45.3		43.0	33.3	
Antenatal care						
Yes	9.4	70.1	< 0.001	66.9	8.3	< 0.001
No	90.6	29.9		33.1	91.7	
Postnatal care						
Yes	6.3	47.9	< 0.001	45.5	8.3	0.003
No	93.8	(52.1)		54.5	(91.7)	
Child screening						
Yes	31.3	56.4	0.012	61.2	0.0	< 0.001
No	68.8	43.6		38.8	100	
Women screening						
Yes	(6.3)	(56.4)	< 0.001	(52.9)	0 (0.0)	< 0.001
No	93.8	43.6		47.1	100	

Table 4 provide that The majority of participants (93.5%) felt that implementing CPGs was an appropriate starting point for self-study (4.19±0.7).When asked about impediments to CPG implementation, 75.4 percent of respondents (3.78±0.9) expressed a desire to learn more about the products before implementing them. However, 134 , healthcare providers and midwifery (77.65%) did not see reading or memorizing recommendations as a hindrance (2.1±0.62). Most , healthcare providers and midwifery found it easy to follow procedures (260; 89.5%; 1.6±0.7) and modify their routines (108; 75.5%; 2.1±0.8).Furthermore, 70.6% of , healthcare providers and midwifery did not believe that managers/directors were not cooperative in adopting CPGs (2.2±0.8), and 76.9% disputed that CPGs did not fit into their working methods (2.1±0.9).

Table 4 findings indicate that most healthcare providers and midwives are receptive to CPGs and find them practical to implement, reflecting high adherence potential. However, the desire for further learning emphasizes a critical barrier that must be addressed to improve adherence across all guideline areas. Tailored training

programs, especially in underserved areas like women's health, could help bridge these gaps and enhance overall CPG implementation in primary healthcare settings.

Table 4: the barrier and facilitator of clinical practice guidelines, using barriers and facilitators assessment tool (n = 143).*

Items	Mean ± SD
Facilitators	
Clinical practice guidelines leave enough room for me to make my own conclusion	3.8 ± 0.8
Clinical practice guidelines leave enough room to weigh the wishes of the patient	3.4 ± 0.8
Clinical practice guidelines are a good starting point for my self-study	4.3 ± 0.7
Barriers	
The lay-out of clinical practice guidelines makes it handy for use	3.1 ± 0.9
I did not thoroughly read nor remember the clinical practice guidelines	1.9 ± 0.8
I wish to know more about the clinical practice guidelines before I decide to apply them	3.9 ± 1.0
I have problems changing my old routines	2.1 ± 0.8
I think parts of the clinical practice guidelines are incorrect	2.3 ± 0.9
I have a general resistance to working according to protocols	1.7 ± 0.7
Other doctors do not cooperate in applying clinical practice guidelines	3.1 ± 1.0
Managers/directors do not cooperate in applying clinical practice guidelines	2.2 ± 0.9
Patients do not cooperate in applying clinical practice guidelines	3.1 ± 0.9
Applying the clinical practice guidelines is too time-consuming	2.6 ± 1.1
Clinical practice guidelines do not fit into my ways of working at my practice	2.2 ± 0.9
Working according to clinical practice guidelines requires a suitable financial budget	3.4 ± 1.1
Clinical practice guidelines are not easily accessible in the clinic	2.7 ± 1.1
Clinical practice guidelines are lengthy and not concise/summarized for easy use	3.3 ± 1.1

DISCUSSION

the findings of this study provide valuable insights into the level of adherence to clinical practice guidelines (CPGs) among healthcare providers and midwifery in primary health care settings, as well as the barriers influencing their implementation. The high overall usage of CPGs, particularly for managing chronic conditions like diabetes, hypertension, and hyperlipidemia, underscores the commitment of healthcare professionals to evidence-based practice. However, gaps in adherence to guidelines for postnatal care and women's health screening highlight critical areas requiring further attention. Additionally, while most participants view CPGs as useful and easy to follow, the need for additional education and training emerges as a significant barrier, suggesting that targeted interventions could enhance adherence and optimize patient care outcomes. These findings will be discussed in relation to existing literature, emphasizing implications for practice, education, and policy development.

Participants in this study reported high (98.0%) implementation of CPGs, with little perceived impediments. A study conducted in Saudi Arabia indicated that PCPs adhere to CPGs at a high rate (88.5%).In the Netherlands, nine primary care , healthcare providers and midwifery reported an average adherence rate of 77%.8 In contrast, 11.3% of PCPs in China acknowledged low understanding and adherence to recommendations in their practice.5 A qualitative survey of GPs in Norway also found little adherence to standards.6

Our study found that adherence to CPGs was high due to the availability of standardized guidelines published by the Ministry of Health, especially for chronic diseases and women's health.In the Norwegian study, , healthcare providers and midwifery struggled with determining whether to follow local or national norms.6The current study found that adherence to CPGs differed by gender and formal training level of participants. Male , healthcare providers and midwifery were more likely to apply CPGs for hypertension (81.2%) and bronchial asthma (59.7%), while female , healthcare providers and midwifery were more likely to follow prenatal care (70.1%), postnatal care (47.9%), child screening (56.4%), and women screening (56.4%). This could be due to cultural preferences, patients seeking antenatal care, or women's preference for female healthcare providers. A study by Alnaim et al.9 found that female , healthcare providers and midwifery were more likely to follow clinical practice guidelines for women's health. Gender has a significant impact on guideline implementation.

Graduates of family physician residency programs were considerably more likely to follow guidelines for preventive care screening (53.7%), prenatal care (66.9%), postnatal care (45.5%), kid screening (61.2%), and women screening (52.9%).Their training may have provided them with the necessary abilities and discipline. A cross-sectional survey in China found that individuals with greater levels of education and professional experience used recommendations more frequently.5 A 2008 meta-analysis found that younger, less-experienced , healthcare providers and midwifery were more likely to adhere to CPGs compared to older, more experienced

physicians.10Our participants found that adhering to CPGs was an effective beginning point for self-study. Most respondents (77.6%) wished to gain a deeper grasp of CPGs before using them.The study in Saudi Arabia found that , healthcare providers and midwifery prefer to actively choose which CPG to use in their practice after studying suggestions, rather than passively following imposed guidelines. In a 2020 meta-review, education and training programs on guidelines were found to be the most effective facilitators of adherence.11

Our study indicated that , healthcare providers and midwifery prefer to learn more about CPGs before implementing them.This differed from the reasons given by , healthcare providers and midwifery regionally and globally. In Saudi Arabia, challenges to CPG adoption include a lack of leadership and structural support, as well as physicians' lack of awareness and knowledge of the product.9 In Norway, hurdles included CPG overload, lengthy and inaccessible recommendations, and a feeling that they did not meet patients' requirements.6, healthcare providers and midwifery in China identified training and access constraints to implementing CPGs.5 Adherence was low in Sweden due to time constraints and a lack of available instructions.12

In our studydid not see managers' lack of participation as a barrier to CPG implementation. This could be because the Ministry of Health supports most preventative care, including as screening, women's and children's health, and chronic care, with policies and infrastructure in place. However, patients' lack of collaboration was viewed as a barrier to guideline compliance, particularly by GPs. This could be due in part to inadequate patient counseling and communication abilities. , healthcare providers and midwifery in Germany also identified patient-related problems and impairments in patient-physician relationships as the most significant hurdles to adherence to type 2 diabetes guidelines.13 The previously mentioned qualitative survey in Norway underlined the difficulties of sticking to guidelines while dealing with multimorbid patients.

CONCLUSION

This study highlights a high level of adherence to clinical practice guidelines (CPGs) among healthcare providers and midwifery in primary health care settings, particularly in managing chronic conditions such as diabetes, hypertension, and hyperlipidemia. However, gaps in adherence were observed in areas like postnatal care and women's health screening, indicating the need for targeted efforts to address these deficiencies.

The positive perception of CPGs as evidence-based tools and their ease of implementation suggests a strong foundation for improving compliance. Nevertheless, barriers such as the need for additional training and education remain significant. Addressing these challenges through tailored training programs, increased resource allocation, and stronger leadership support can further enhance CPG adherence.These findings provide important insights for healthcare policymakers and educators to develop strategies that promote comprehensive and consistent implementation of CPGs, ultimately improving the quality of care in primary healthcare settings.

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