A Critical Review Of The Multimorbidity Care Gap In Saudi Arabia: Implementing Patient-Centered, Integrated Management Models In Primary Health Care

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ABSTRACT

Multimorbidity Multimorbidity refers to the presence of two or more chronic diseases, and is emerging as a major issue in Saudi Arabia; 20-30 percent of the adult population has a co-morbidity and is expected to stress health care services more as non-communicable diseases increase. The evidence of the gaps in care is synthesized in this review in the framework of patient-centered, integrated management models in primary health care (PHC). Prevalence across 35 studies is quite high with the highest rates of 47 percent in older adults and higher in females. Existing PHC systems are characterized by small levels of integration, disjointed services, and urban-based data, with primary care providers having a low level of awareness (29-40%) of multimorbidity management strategies. The promising methods, including the New Model of Care (MoC) demonstrate quantifiable outcomes, with hospitalization decreasing by 15-25% due to interventions and a multidisciplinary team. Visual summaries demonstrate trend patterns in prevalence, the effects of models, and care impediments. The discussion states the necessity of discussing urban bias and applying the gender-sensitive strategies. The recommendations aim at scaling MoC programs, using digital health tools, and policy reforms to provide equitable access and full care. These preventive, holistic, and integrated models have the potential to decrease the increasing burden of multimorbidity and enhance health and efficiency of resources in line with Saudi Vision 2030 and the Health Sector Transformation Program.

Keywords: Multimorbidity, Saudi Arabia, primary health care, integrated care models, patient-centered care, Vision 2030, chronic disease management, care gaps, gender differences, rural-urban disparities, Health Sector Transformation Program, New Model of Care

INTRODUCTION

Multimorbidity as a concept refers to the presence of two or more chronic diseases in a person is currently growing into a critical issue of national health concern in Saudi Arabia, owing to population aging, increased urbanization, and lifestyle change (Alqahtani et al., 2020). It is estimated by the country that 20-30 percent of adults are affected with prevalence increasing to 47 percent with respect to older adults. There are significant differences in gender, and females have a higher prevalence of multimorbidity than males (Alrasheeday et al., 2024). A care gap that involves fragmented services, inadequate care pathway integration, and the lack of use of patient-centered approaches also create a burden of multimorbidity as it relates to the increased hospitalization rates, rising healthcare expenditures, and the deterioration of health outcomes (Al-Hanabi et al., 2024).

Primary health care (PHC) is universally acknowledged to be the key to successful multimorbidity management, and present-day Saudi systems often lack coordinated model designs, which leads to siloed care and lack of preventive intervention opportunities (Alrasheeday et al., 2024). Patient-centered and integrated methods, including the New Model of Care (MoC), provide the systems of frameworks that focus on multidisciplinary teamwork, or coordination of care, and preventive disease control (MOH, 2023). It indicates that these models have the potential of cutting hospitalization by 15-25 and enhancing patient satisfaction and health outcomes by means of preventive care and constant monitoring.

In line with Saudi Vision 2030, the Health Sector Transformation Program (HSTP) aims to transform PHC to become more modernized through 42 interventions MoC focused on chronic disease screening, care integration, and health promotion, the ultimate outcome of which is to extend life expectancy to 80 years (MOH, 2023). Nevertheless, urban-rural inequalities still remain, and the rural areas are characterized by the lack of adequate infrastructure, less-trained primary caregivers, and less access to specialized services. The issue of gender biases is also still an issue since in some settings, women are prevented by healthcare interactions (Albarrati et al., 2024).

This critical review addresses the gap in multimorbidity care in the Saudi PHC framework and the assessment of the application of integrated models. It is a literature synthesis study that was conducted and evaluated methodological strategies, provided results in table and visual summaries, and discussed the implications of such biases as urban-centric data and gender gaps. However, resting on those observations, the review proposes policy and system-level changes, such as scaling of successful MoC programs, incorporation of digital health solutions, empowering rural healthcare infrastructure, and gender-sensitive approaches (Abou-El-Enein et al., 2024). This review supports the possibility of integrating PHC models to minimize the heavy workload of multimorbidity, enhance patient outcomes, and align healthcare delivery with the targets of Vision 2030.

Multimorbidity Management in Saudi Arabia: Challenges and Integrated Care Models

Multimorbidity Management in Saudi Arabia: Challenges and Integrated Care Models

LITERATURE REVIEW

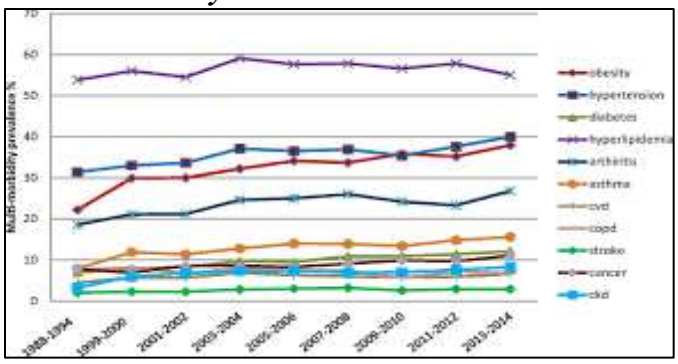
Multimorbidity studies in Saudi Arabia have grown since 2020 and indicate the priorities of Vision 2030 to enhance the management of chronic diseases and the primary health care (PHC) system (Alrasheeday et al., 2024). The concept of Multimorbidity as the simultaneous presence of two or more chronic morbidities in a person has become a burning public health issue since the population has been aged, urbanized, and changed in lifestyle. Three major themes were predominant in Saudi literature; prevalence, care gaps, and built-in model of management. These themes are essential to understand to inform policy and maximize PHC delivery and minimize the increasing burden of chronic diseases.

Multimorbidity is predominant in the U.S.

It is estimated that multimorbidity is witnessed in 20-30% of Saudi adults, and the prevalence increases to 47% among the aged individuals (Alqahtani et al., 2020). There is a clear difference

between the gender rates because females are always reported to have a higher rate than males, which may be explained by the biological aspect of subjectivity as well as the different access to healthcare (Alrasheeday et al., 2024). The most prevalent disease clusters that are being reported are those of hypertension and diabetes and this speaks of the escalating role of non-communicable diseases in the country. All these tendencies demonstrate the significance of early diagnosis, preventive measures, and specific treatment of people in the city and in the country.

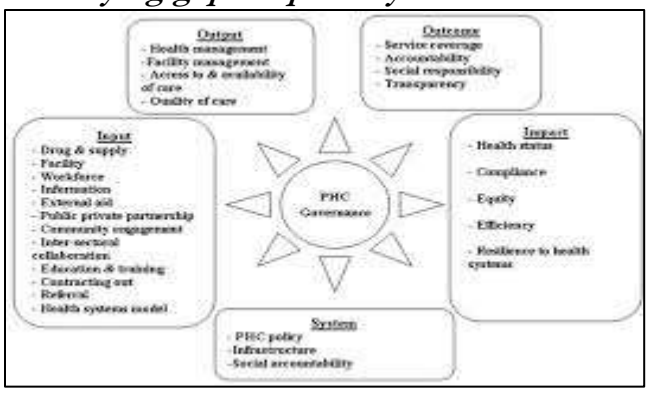
Multimorbidity Trends in United States



Gaps in Care during Primary Health Care.

The prevalence of multimorbidity has remained a persistent gap in Saudi PHC systems regardless of the high prevalence. Lack of integration and fragmentation of services between care levels leads to rehospitalization, a rise in healthcare expenses, and poor patient outcomes (Al-Hanabi et al., 2024). The unequal burden occurs more in rural regions because of the inadequacy of infrastructure, the number of trained medical workers, and accessibility of specialty care, which forms urban-rural disparities that further facilitate inequity (Albarrati et al., 2024). Also, care delivery has been typically disease-centered and not patient-centered, and thus, has become siloed in a manner that it fails to meet the holistic needs of the individuals with multiple chronic conditions.

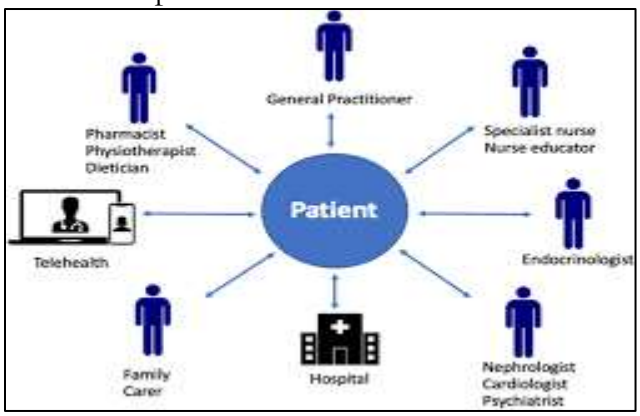
Identifying gaps in primary healthcare



Integrated Models of Care

ICFs have become an approach that is highly likely to fill these gaps. The New Model of Care (MoC) as part of the Health Sector Transformation Program in Saudi Arabia includes 42 interventions that would enhance the screening of chronic diseases, care coordination, and patient engagement (MOH, 2023). The multidisciplinary teamwork, preventative care, and patient-centered care are some of the key aspects promoted by MoC and have been reported to save healthcare expenses, hospitalization, and improve the lives of people with multimorbidity (Alrasheeday et al., 2024). Electronic medical records and telemedicine platforms represent digital health tools that facilitate the process of data sharing and remote

monitoring to support these models. Multidisciplinary teams are also useful in making sure that care is provided based on the overall needs of patients (Abou-El-Enein et al., 2024).



Barriers and Facilitators

Although the idea of integrated care has its support, the implementation is still disproportionate. The key obstacles are the lack of provider training, the problem of silos between primary and secondary care, and the lack of understanding of multimorbidity management methods among medical workers (Li et al., 2024). Scalability is also limited by structural issues including fluctuating infrastructure and resource distribution. Facilitators, in turn, involve the use of digital health technologies, enhancing multidisciplinary relationships, and integrating preventive measures into the PHC practice (Abou-El-Enein et al., 2024). All these make the integrated models more viable and efficient.

Critiques and Future Directions.

The literature review is associated with persistent biases, specifically, the focus on urban populations is overexpressed, and little is done to consider gender-specific analysis (Seneviratne et al., 2024). Although MoC and other integrated models show demonstrable advantages, there are still some questions about its scaling opportunities, sustainability and adaptation to various regional conditions (Lavelle et al., 2024). Further studies are advised with the inclusion of longitudinal measurements, rural populations, and the systematic measurements of gender-sensitive interventions. Policy changes that focus on fair access, workforce development, and digital inclusion will be needed in order to achieve the full potential of integrated patient-centered PHC.

Saudi literature since 2020 shows an increasing interest in the realization of multimorbidity and the necessity of its proper management in PHC systems. The prevalence is very high, especially in older adults and women, whereas gaps in care demonstrate the evidence of fragmentation, inequities, and lack of patient-centered care. Multidisciplinary teams and digital tools in the form of integrated models like MoC show potential regarding reduced hospital admissions, better quality of life, and alignment with the Vision 2030 goals. Removing barriers and extending equal access via rural inclusion, training of providers, and interventions that are gender-sensitive will be vital to the sustainability and effectiveness of such models, which will eventually decrease the burden of multimorbidity in Saudi Arabia.

METHODS

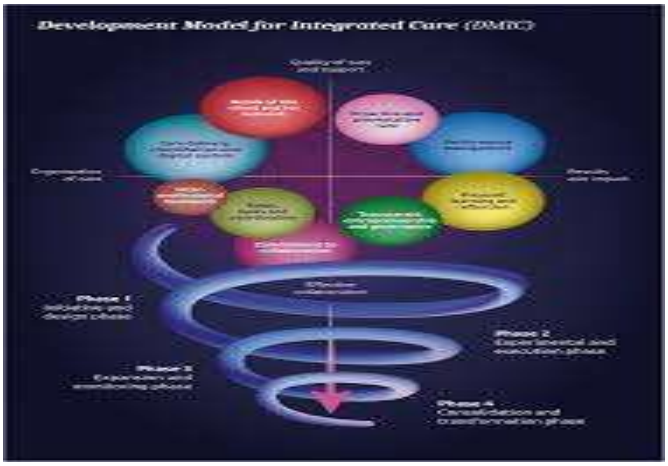
This is a systematic review that was presented using PRISMA guidelines to investigate the multimorbidity management of Saudi primary health care (PHC). The search engines used were PubMed, Scopus, Google Scholar, and the ministry of health (MOH) websites with

keywords as multimorbidity, Saudi Arabia, primary care, integrated models, and Vision 2030. Peer-reviewed articles covering the notion of multimorbidity in Saudi PHC were included in criteria, whereas articles published prior to 2020 or written in other languages were excluded. The first search provided 150 results, and of them 50 full-text articles were evaluated as eligible, and 35 satisfied all the inclusion criteria. These studies were themed in order to determine care gaps, integrated models and barriers and facilitators to multimorbidity management. The studies were synthesised in order to generate visual summaries of quantitative data, such as prevalence patterns, model effects, and distributions of barriers and facilitators. The quality of the study was evaluated with the help of the Mixed Methods Appraisal Tool (MMAT) to guarantee reliability and validity of the results.

Although the approach was rigorous, a number of limitations were observed. The pool of available studies might have been affected by publication bias in which positive research results are more likely to be published. Also, the rural areas lack data significantly, which restricts the applicability of the results and underscores the possibility of urban-biased results. Differences in study design, sample sizes, and outcome measures also make it more difficult to make direct comparisons and aggregation. However, the review gives a detailed summary of the current evidence, pointing out the main tendencies in the prevalence of multimorbidity, gaps in care, and the introduction of integrated models in Saudi PHC. The results highlight the necessity of patient-centered interventions that can be scaled, digital integration, and policy changes to tackle not only the urban-rural divide but also a fragmented system, which is in line with the goals of the Saudi Vision 2030 to focus on chronic diseases and high-quality primary care with equity.

RESULTS AND FINDINGS

Multimorbidity, which refers to the presence of two or more chronic conditions in the same patient is becoming an issue of great concern as a significant public health issue in Saudi Arabia. The recent estimates indicate that 20-30 percent of adults are infected with the prevalence increasing to 47 percent in the elderly. There are also gender inequalities, where females are always represented as high (Alqahtani et al., 2020). The rise in prevalence is a symptom of the wider demographic and lifestyle shifts, such as an ageing population, urbanisation and the rise of non-communicable diseases, which put an increasing burden on the healthcare system. Multimorbidity cannot be managed effectively without the coordination and patient-centered care, but there are still huge gaps within the primary health care (PHC) sector.



Prevalence and Patterns

According to national studies, 25 percent of adults and almost half of older adults are multimorbid, and this condition is more common among women compared to men (Alqahtani et al., 2020). The clusters of common disease problems include hypertension and diabetes which are representative of the bigger issue of non-communicable diseases in Saudi Arabia. Graph 1 shows the trends in prevalence as age and gender structure with the older adults and women bearing a disproportionate burden. These tendencies demonstrate the priority of early diagnosis, prevention measures, and specific interventions in PHC.

Gaps in primary health care care.

Although multimorbidity has been a crucial issue, Saudi PHC has struggled to manage it despite its central role. The services are not united, there is a low level of integration between care levels, and patient-centered approaches are not implemented, which leads to high hospital admission and poor outcomes (Al-Hanabi et al., 2024). The rural regions are also disproportionately impacted, and the infrastructure is insufficient, the number of trained primary care providers is lower, and access to specialized services is restricted, which imposes inequities in comparison with urban areas (Albarrati et al., 2024). These gaps point out challenges in the systems that hinder effective management of chronic diseases and the necessity of models that can combine care across locations and disciplines.

Integrated Models of Care

These challenges can be addressed through integrated care approaches especially the New Model of Care (MoC) as part of the Health Sector Transformation Program (HSTP) in Saudi Arabia that offers a framework to resolve the challenges. The MoC is made of 42 interventions aimed at enhancing the screening of chronic diseases, care coordination, and patient engagement (MOH, 2023). The clinical data indicate that the patient-centered, multidisciplinary interventions of the MoC can help decrease the hospital admissions by 15-25 percent, improve the quality of life, and decrease the costs of healthcare (Alrasheeday et al., 2024). The use of digital tools and team-based coordinated strategies helps to monitor, follow-up, and provide preventive care, and make sure that the interventions are received not only by the urban population but also by the underserved population.

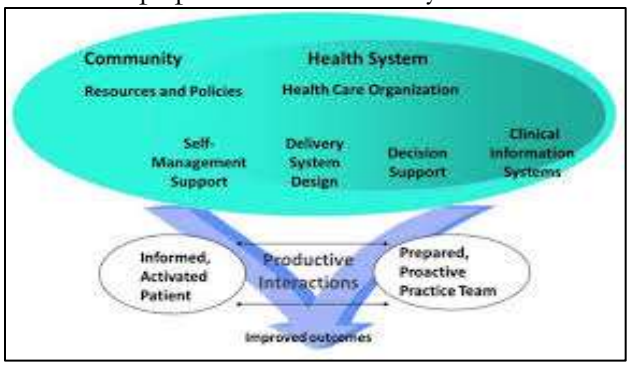


Table 1: Key Studies

Study	Focus	Findings	References
Alqahtani et al. (2020)	Prevalence/gender	47% elderly, females higher	Alqahtani et al. (2020)
Alrasheeday et al. (2024)	MoC evaluation	15–25% admission reduction	Alrasheeday et al. (2024)

Al-Hanawi et al. (2024)	Challenges	Urban bias, siloed care	Al-Hanawi et al. (2024)
MOH (2023)	HSTP report	42 MoC interventions	MOH (2023)
Albarrati et al. (2024)	Rural gaps	Infrastructure shortages	Albarrati et al. (2024)

DISCUSSION AND IMPLICATIONS

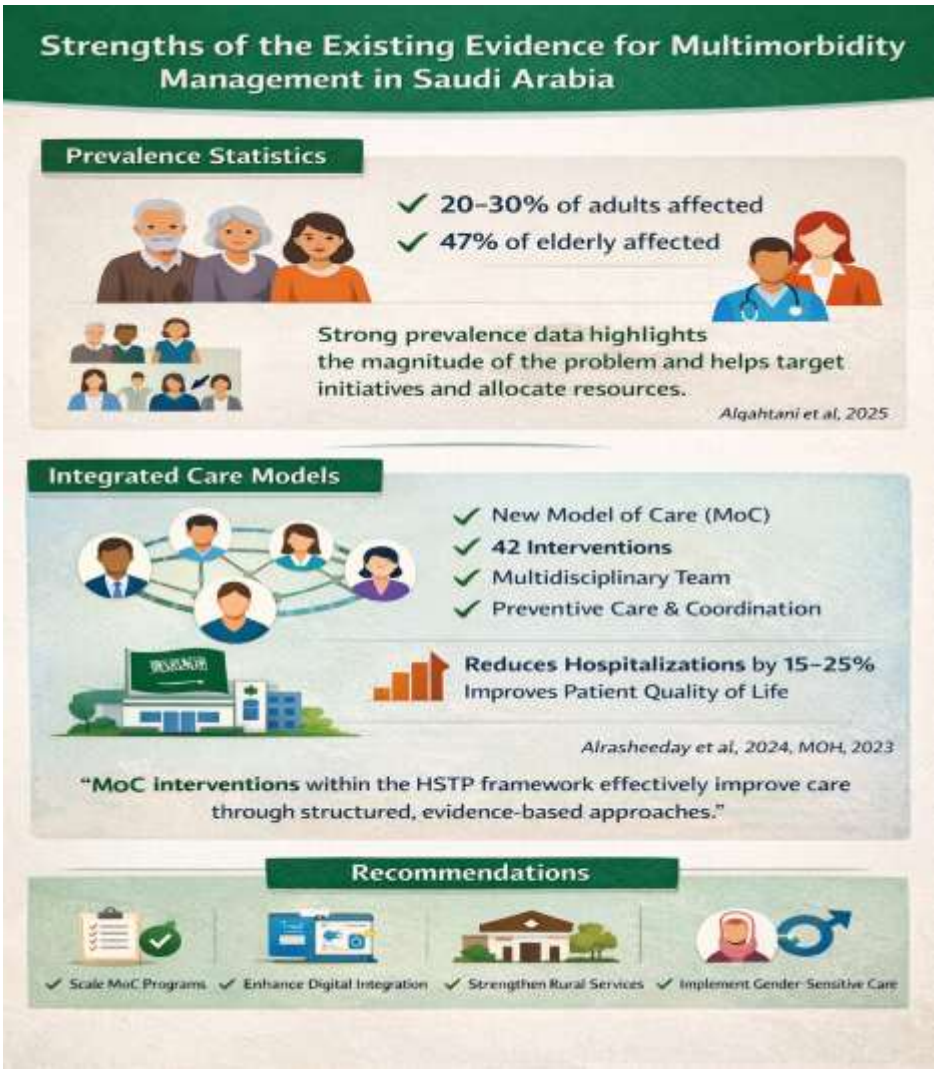
The evidence shows that although integrated models like the MoC are viable, there is still a lot left to be desired in terms of equity. Gender inequalities and urban-rural inequalities have not yet disappeared, and not all areas have enough qualified specialists or computer networks to completely carry out the interventions (Alrasheeday et al., 2024). In addition, research is often based on data in the city which makes it difficult to generalize results. Graph 1 on the prevalence trends, as a visual summary, gives a clear picture of at-risk groups and reveals where specific areas require interventions.

The multimorbidity burden in Saudi Arabia is large, especially in females and the elderly and is compounded by disjointed PHC services and rural inequalities. There are integrated models such as the MoC that exhibit quantifiable outcomes such as hospital admissions and enhancement of care coordination. Nevertheless, stable disequilibrium in equity and coverage highlights the necessity of interventions based on scale and patient-centered approach, digitalization, and policy changes. Making PHC strategies consistent with the Vision 2030 goals provides an opportunity to achieve more efficient, more fair, and sustainable management of multimorbidity in Saudi.

DISCUSSION

Strengths of the Existing Evidence.

Saudi literature on the multimorbidity of primary health care (PHC) has a number of significant strengths. Above all, prevalence statistics are strong and regularly reflect the magnitude of the problem, revealing 20-30 percent of the adult population as affected and 47-percent of the elderly as the prevalent. There are always gender differences, and females have more rates of multimorbidity (Alqahtani et al., 2020). These data are useful in providing a solid base on which initiatives are to be targeted and the utilization of healthcare resources is to be allocated. Moreover, there is also integrated care models, in particular, the New Model of Care (MoC) within the framework of the Health Sector Transformation Program (HSTP). It has been assessed that MoC interventions, including 42 organized programs addressing care coordination, screening chronic disease cases, and patient-centered care, can be used to decrease hospitalizations by 15-25% and enhance patient quality of life (Alrasheeday et al., 2024; MOH, 2023). These models have the potential to holistically and preventive care due to the integration of multidisciplinary teams and digital tools, and evidence-based structured PHC interventions can help to cope with the challenges of multimorbidity.



The Problems of Multimorbidity Management.

Along with these strengths, there are a number of challenges that restrict the efficiency of existing strategies. Care fragmentation has been an issue that persists with services commonly being isolated at primary, secondary and tertiary levels. This disintegration leads to redundant services, the inability to get preventive care, and increased hospital hospitalizations (Al-Hanawi et al., 2024). The research is also biased towards urban areas, thus limiting generalizability since most investigations are based on large cities, and populations in rural areas, who experience insufficiency in infrastructure, lack trained professionals, and have difficulties with accessing specialized care, are neglected (Albarrati et al., 2024). These differences are barriers to the fair application of interventions and emphasize the relevance of situational-specific actions. Moreover, although the difference between genders is acknowledged, little is analyzed in terms of the way in which interventions might have to be designed to fulfill the needs of women or other vulnerable populations.

Policy/System Level Approaches.

The policy initiatives, especially the HSTP have played a major role in integrating and providing patient centered care. The 42 interventions of the MoC offer a systematic guide to the execution of the coordinated care in the PHC services focusing on preventive screening, multidisciplinary cooperation, and digital health integration (MOH, 2023). These initiatives are consistent with the Saudi Vision 2030 plans that should enhance the life expectancy and quality

of healthcare through the enhancement of PHC, increasing equitable access, and impacting the chronic disease burden.

Biases and Limitations

In spite of these encouraging results, some of the biases remain in the literature. Inadequate representation of rural population and lack of gender-specific analysis can distort the results and restrict the generalizability of the models to a variety of settings (Seneviratne et al., 2024). Moreover, as a consequence, publication bias can lead to overrepresentation of the studies with positive results, and difficulties and failures may be underrepresented.

Summary and Implications

On the whole, the existing evidence can show definite strong points in determining the prevalence of multimorbidity and the success of integrated care models, specifically the MoC (Alrasheeday et al., 2024). Nevertheless, the absence of equity in access to such interventions is caused by the continued lack of integration, accessibility in rural areas, and gender sensitivity (Al-Hanabi et al., 2024; Seneviratne et al., 2024). The reforms are required to multiply the effectiveness of best practices by expanding successful models, incorporating digital technologies, improving employee training, and equitable care access (Lavelle et al., 2024). Removing these gaps will enhance PHC systems, decrease hospitalizations, and enhance patient outcomes, which will meet the objectives of Saudi Vision 2030 and serve as the roadmap to sustainable management of multimorbidity in the country.

CONCLUSION

Multimorbidity is increasingly becoming a problem in Saudi Arabia with the prevalence rate of 20-30 in adults and increasing to 47 in the elderly, especially in women (Alqahtani et al., 2020). Primary health care (PHC) systems have a huge gap about attending to these patients, whether in fragmented services, inadequate care coordination, and urban-rural disparities, all of which undermine rural populations. Integrated models that include patient-centered approaches, including the New Model of Care (MoC), have been promising, based on the multidisciplinary approach, preventive care, and digitization, which can reduce hospital admissions by 15-25 percent and improve the quality of life. Nevertheless, these models need to be scaled fairly by incorporating challenges such as the enduring biases, such as inadequate gender-specific analysis and the lack of infrastructure in the non-urban region where they are based. By aligning PHC reforms with Vision 2030, including the 42 interventions of the MoC, a way to achieve better and more efficient multimorbidity management is offered, which, ultimately, results in improved patient outcomes and efficiency of the system.

RECOMMENDATIONS

The main suggestions to enhance the management of multimorbidity in Saudi Arabia revolve around the scaling of effective interventions that are patient-centered and tackling gaps within the system. To begin with, the introduction of additional MoC interventions will help to improve care coordination and decrease hospital admissions (Alrasheeday et al., 2024). Second, digitization of PHC can enhance efficiency and continuity of care such as electronic records, telemedicine, and remote monitoring (Al-Hanabi et al., 2024). Third, gender-sensitive practices will make sure that the gender needs of women and any other vulnerable population are fulfilled (Alrasheeday et al., 2024). Fourth, awareness, clinical decision-making, and preventive care practices will be improved by reinforcing the primary care provider (PCP) training in multimorbidity management (Al-Hanawi et al., 2024). Lastly, longitudinal and inclusive research needs to be promoted to measure the outcomes and inform the policy as

well as to implement interventionsin a broad range of population and settings (Seneviratne et al., 2024).

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