

Shaping the Future of Digital Health in MENA

Introduction

There are many forms of digital health. Some are purely to improve the healthcare system such as health information systems and computerized disease registries. Others are to improve healthcare through patients; like education and behavior change are mostly delivered through telephonic means. E-health is also gaining momentum in MENA, as the region is known for its high mobile penetration and many e-health solutions are mobile-based. This could be anything from SMS appointment reminders to complex mobile health apps. All forms of digital healthcare in the future have the potential to improve the health and healthcare of the people in the MENA region.

The content will be assessing the future of digital health within the Middle East and North Africa region. Digital health is still in its infancy in MENA, yet is growing rapidly. There is a need to forecast how this field will progress so that healthcare providers, governments, and other institutions can make informed decisions and investments. Digital health is defined as a field which employs IT and wireless solutions to improve healthcare, whether it be the delivery of healthcare itself or the way medical information is stored and exchanged.

Background of Digital Health in the MENA Region

In 2009, the World Health Organization's (WHO) Regional Office for the Eastern Mediterranean expressed concerns that Member States in the Middle East had paid insufficient attention to the use of ICT in health, compared to other countries at similar stages of development. WHO stated that "assessing, formulating, and implementing eHealth, ICT and telecommunications policies, strategies and plans is a low priority activity in many of the countries of the Eastern Mediterranean Region (EMR). The situation is in contrast to the recognized potential of ICT to strengthen health systems and improve health in other regions of the world". This potential that is evident in other regional health systems is in regard to quality, efficiency, access, and sustainability of health services with the use of ICT. WHO made the comments alongside releasing the eHealth for Health Development strategy whose goals were in part to "strengthen national capacity in eHealth through the development of effective governance, leadership and strategic planning, and the generation of reliable information".

Digital health denotes the application of information and communication technologies (ICT) to support and advance health solutions. This rapidly growing field has the potential to greatly affect how consumers, healthcare providers, and others use and take care of health. The ability to collect, share, and analyze health information with ease is of great benefit to consumers and healthcare providers. There is increasing evidence that utilizing digital health resources and tools can improve health outcomes by increasing the quality and efficiency of healthcare provision while delivering cost reductions. Digital health will therefore be a critical factor in the future of the health industry. Despite the potential benefits of digital healthcare solutions, there is a large variance in diffusion and application of ICT to health both between and within countries. The Middle East is no exception to this general global trend.

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Digital Health Market Map at Mena Region

Importance of Examining the Future of Digital Health: The future prospect of digital health will have a very big impact on the people and on health itself. In terms of providing healthcare services, the use of technology will make the treatments more effective and efficient. For the next 10-15 years from now, as technology and the internet have become one of the most important things in human life, surely people from all over the world will look for treatment or medications through the internet. This will reduce the time and cost for the patient itself because they don't need to go to the hospital regularly to get treatment. Furthermore, the use of digital health will make healthcare services accessible anywhere and anytime. This is because in the near future, the internet will be accessible from any point in the world.

Health is considered to be an important value for people around the world to live comfortably in both mental and physical condition. In terms of this, people have been looking for the best way to protect their health for longer and better living, and one of the most effective ways is treatment by a physician or doctor. By comparing to the old methods, the method of treatment has changed

significantly following the advances in technology, especially in the digital world. As an example, previously the method for diagnosis is by asking the patient's condition and symptoms, but now doctors can use the internet to find symptoms and the best current treatment for the patient. Digital health involves the use of information and communication technologies to help address the health problems and challenges faced by consumers, patients, and the healthcare delivery system.

Current Landscape of Digital Health in the MENA Region

1. MENA Digital Health 50:

- HolonIQ has compiled an inaugural list of the 50 most promising Digital Health startups in the MENA region. These companies are transforming health and wellness through the application of new technology or scientific knowledge. The selection criteria include factors like market impact, product innovation, team diversity, capital, and momentum [1].

- The quality of Digital Health companies in MENA is exceptionally high, and this cohort of 50 startups represents just the tip of the iceberg. The mission is to map the future of Digital Health in the region .

- The companies on this list are young, fast-growing, and innovative, with a focus on health technology [1]. You can find more details on the

2. Market Growth:

- The prevalence of chronic diseases, such as cardiovascular diseases and diabetes, has driven the demand for innovative and accessible healthcare solutions in MENA.

- The MENA digital health market is expected to grow at a steady rate of around 19.6%

3. Challenges and Opportunities:

- The healthcare sector in the MENA region faces challenges related to population growth, cost, expertise, chronic disease burden, and harsh geography.

- Digital technology is well-positioned to address these issues by offering personalized, cost-effective, and precise treatment methods.

- AI-powered tools are expected to transform diagnostics and the delivery of medical services in the region.

4. Trends:

Role of AI: AI-based cognitive technologies are proving useful for drug discovery, clinical decision support, and medical imaging across the world, including MENA.

5. Startup Ecosystem:

The health tech startup ecosystem in MENA has experienced remarkable growth, with a 22-fold increase since 2016. It is now valued at over 1.5 billion with a significant investment reaching 930 million. USD

Limitations faced by the Middle East and North Africa (MENA) region in the realm of Digital Health

1. Conflict and Fragility:

The MENA region is marked by ongoing conflicts, political violence, and fragility in several countries. These conditions have devastating effects on health systems and infrastructure.

Digital health technologies can play a crucial role in enhancing healthcare quality, accessibility, and availability in fragile and conflict-affected states. However, their adoption faces hurdles due to the challenging environment [1].

2. High Cost of Digital Health Products and Maintenance:

Implementing and maintaining digital health solutions can be expensive. The financial burden may limit the widespread adoption of these technologies, especially in resource-constrained settings [2].

3. Limited Research and Development Funding:

Insufficient investment in research and development hampers the creation of innovative digital health solutions tailored to the MENA context. Adequate funding is essential for sustainable progress [2].

4. Shortage of Qualified Personnel:

A skilled workforce is crucial for successful digital health implementation. The MENA region faces challenges in recruiting and retaining professionals with expertise in health informatics, data science, and technology [2].

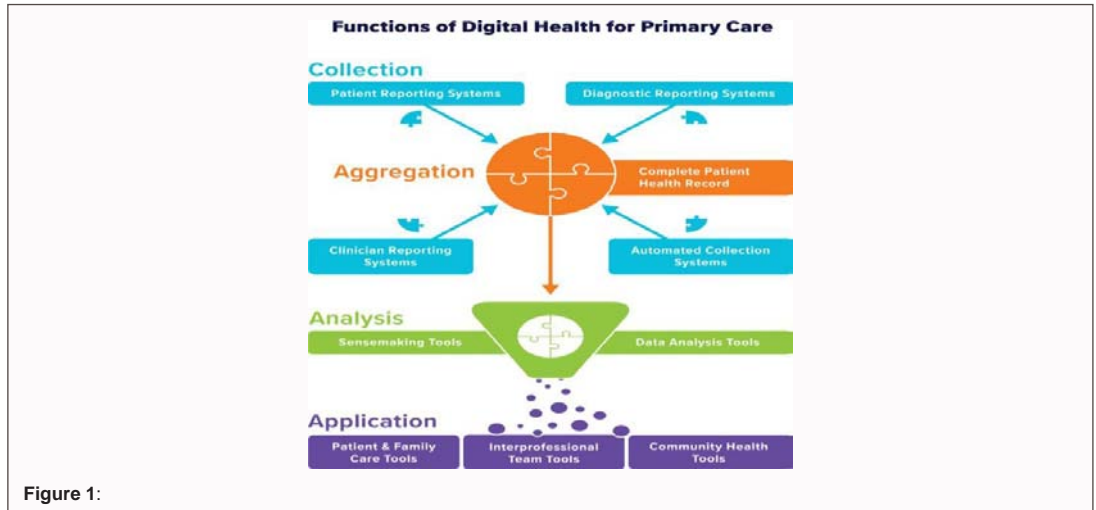


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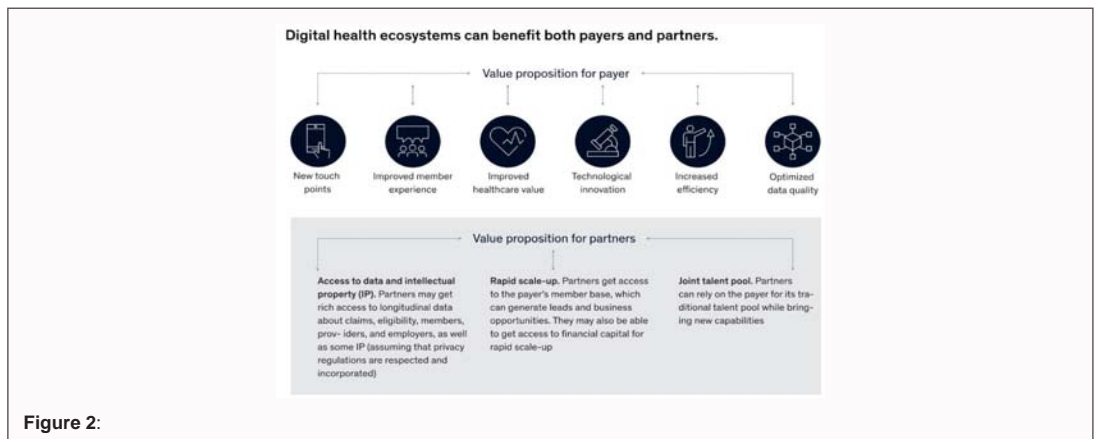


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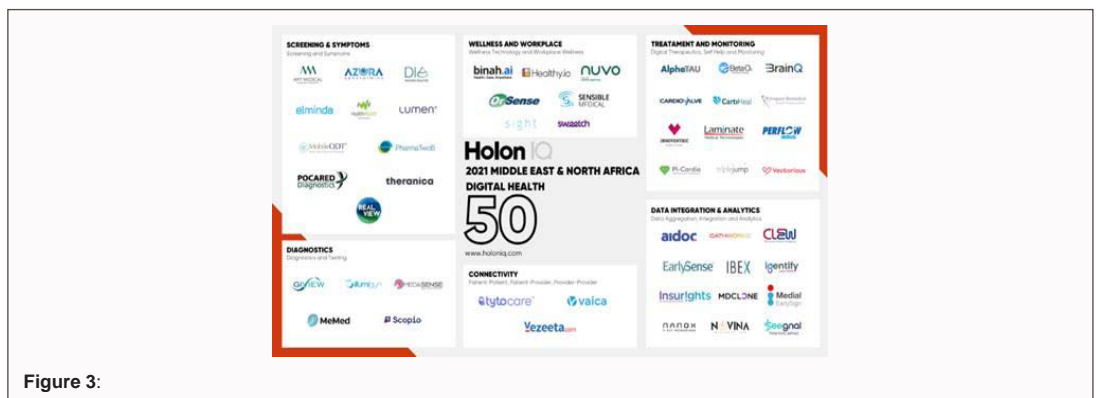


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5. Absence of Regulatory Agencies:

The lack of well-established regulatory frameworks specific to digital health can hinder progress. Clear guidelines and oversight are necessary to ensure patient safety, data privacy, and ethical use of technology [2].

6. Inequitable Access to Health Services:

Disparities in healthcare access persist across the MENA region. Digital health interventions must address these inequities and ensure that vulnerable populations benefit equally [3].

7. Deficiency in Health Workforce:

The shortage of healthcare professionals, especially in rural and remote areas, poses a challenge to implementing and scaling digital health initiatives [3].

8. Weak Technological Infrastructure:

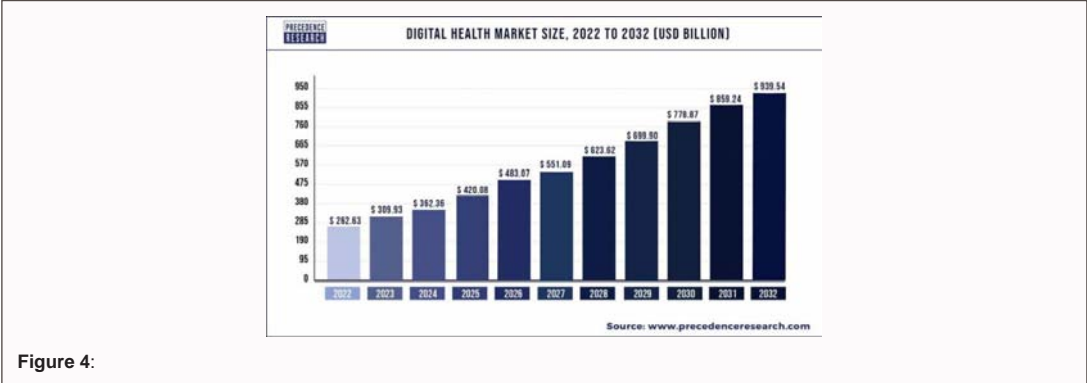


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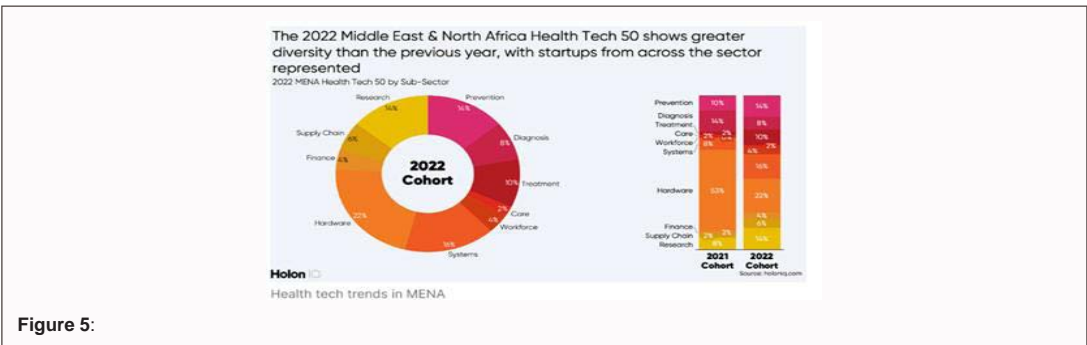


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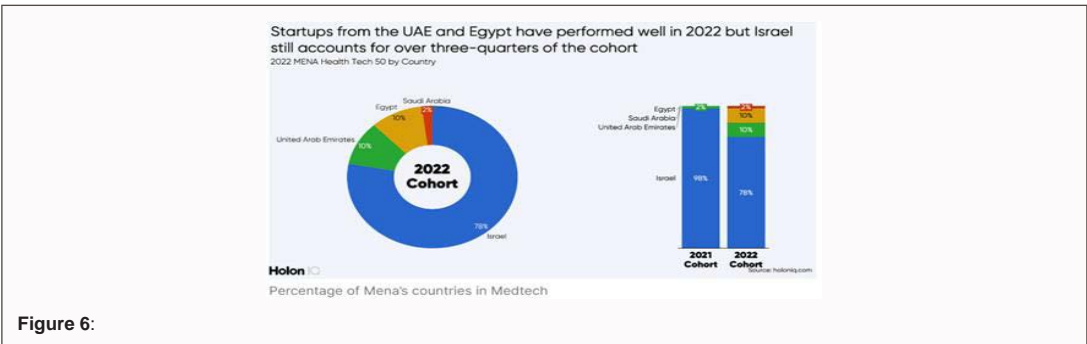


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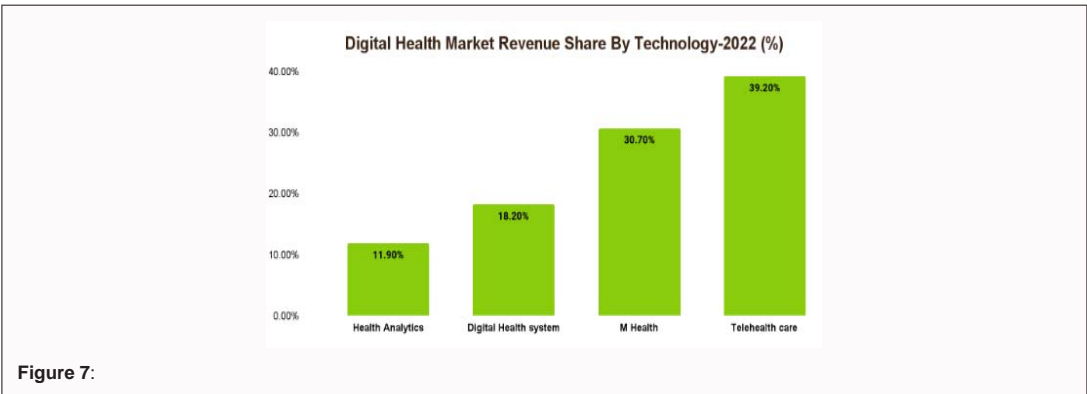


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Some MENA countries face infrastructure limitations, including unreliable internet connectivity and outdated hardware. These factors affect the seamless adoption of digital health tools [1].

9. Privacy Concerns:

Ensuring patient privacy and data security is critical. Striking the right balance between data sharing for health improvement and safeguarding individual privacy remains a challenge [1].

10. Leadership Challenges:

Effective leadership and governance are essential for driving digital health transformation. MENA countries

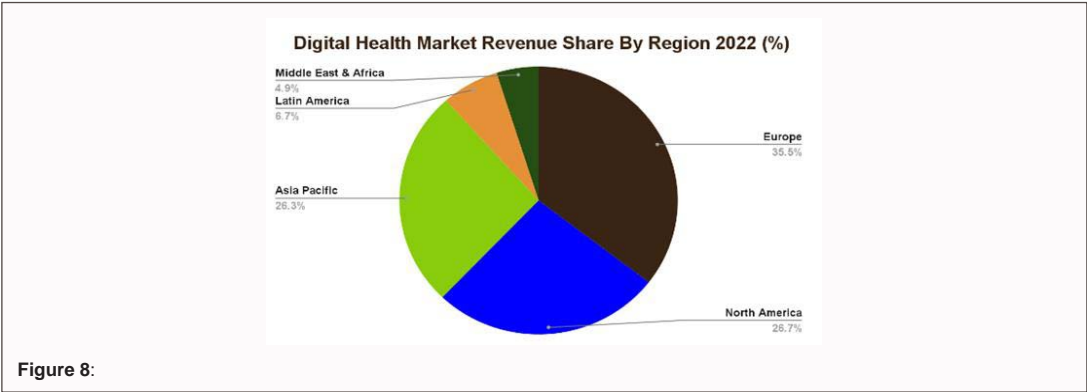


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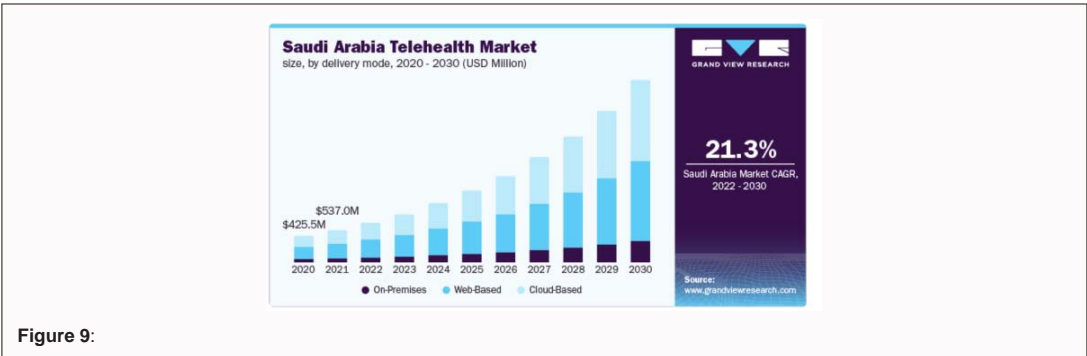


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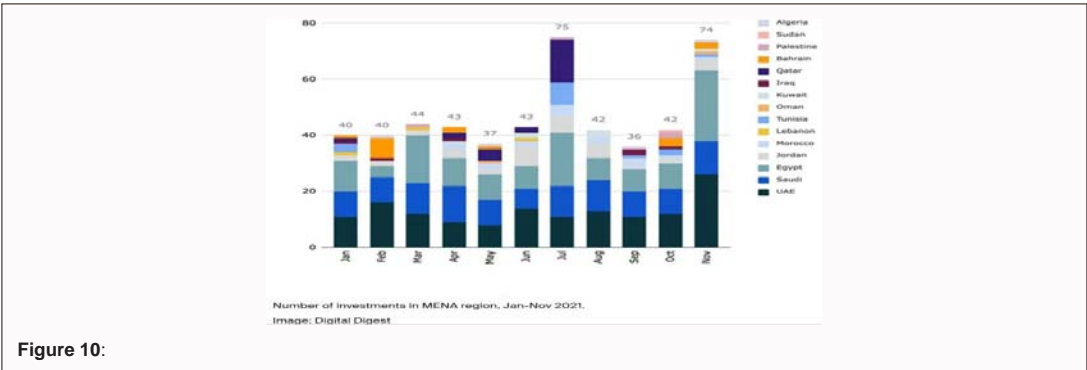


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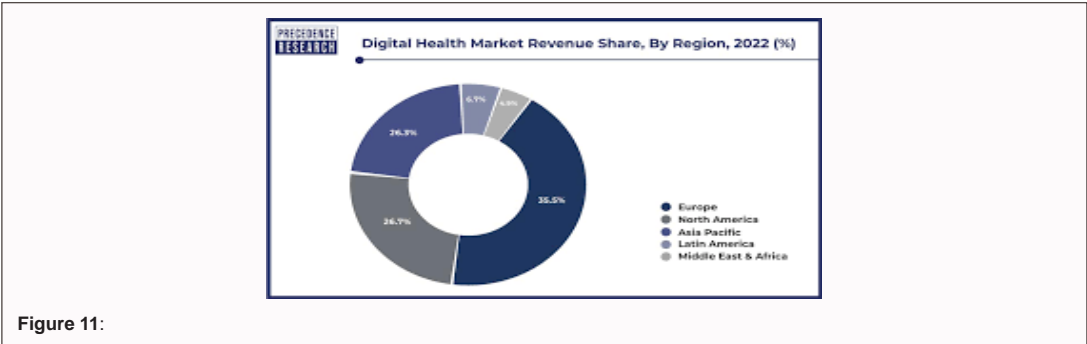


Figure 11:

need visionary leaders who can navigate complex healthcare landscapes and champion innovation [3].

Future outlook and implications of Digital Health in the Middle East and North Africa (MENA) region

1. Technological Advancements:

The MENA region is poised to witness significant technological advancements in digital health. Innovations in areas such as telemedicine, wearable devices, and AI-driven diagnostics will reshape healthcare delivery.

Telehealth will continue to gain prominence, enabling remote consultations, monitoring, and follow-ups. This trend is especially relevant in geographically dispersed regions.

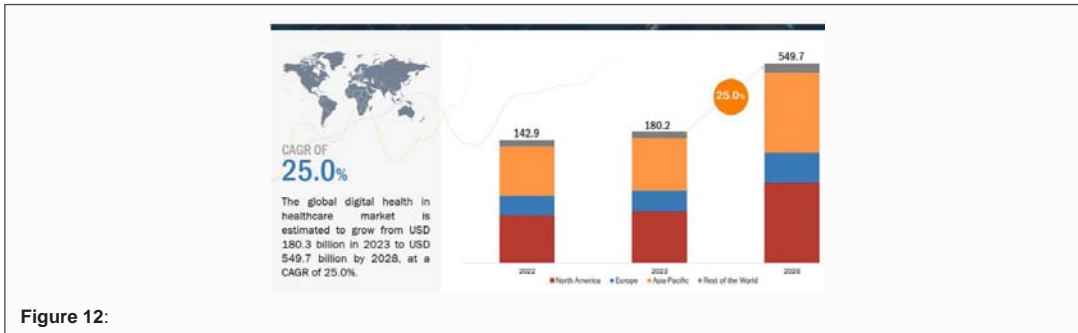


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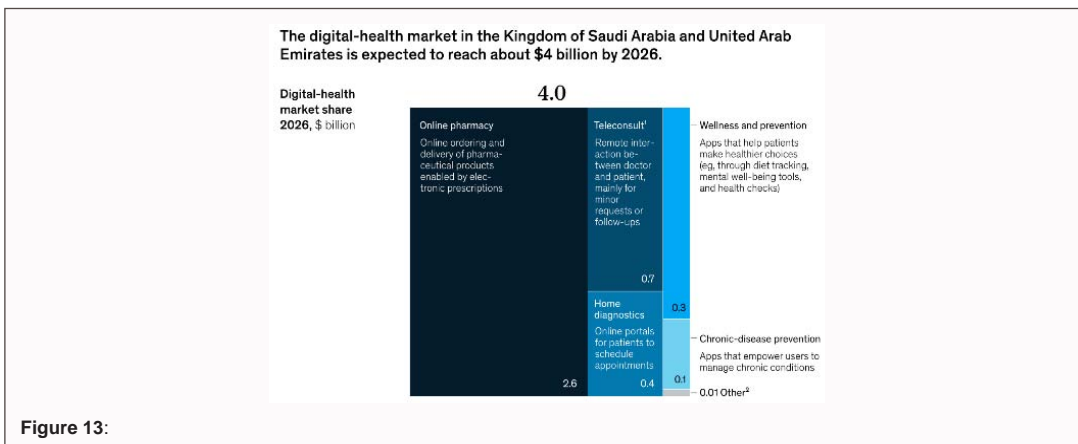


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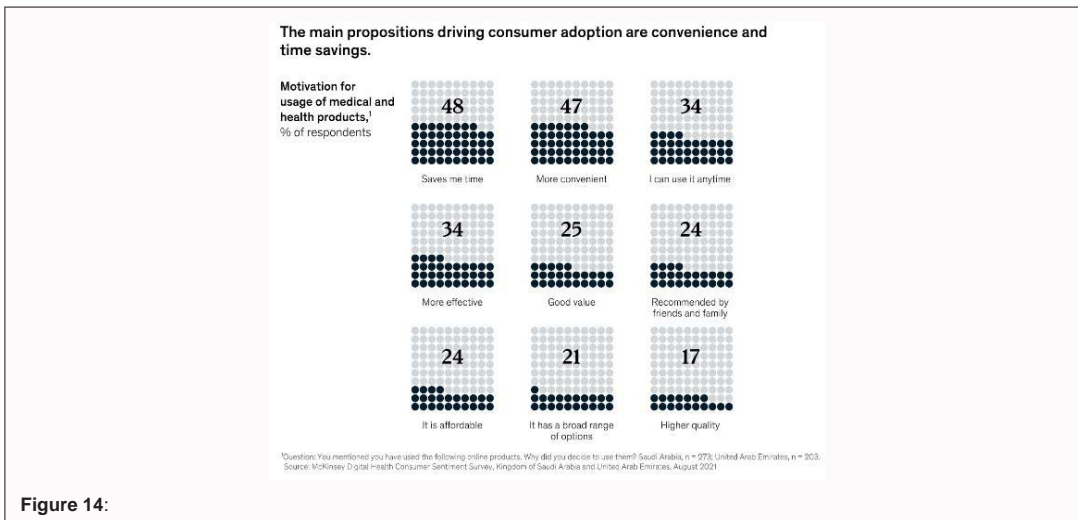


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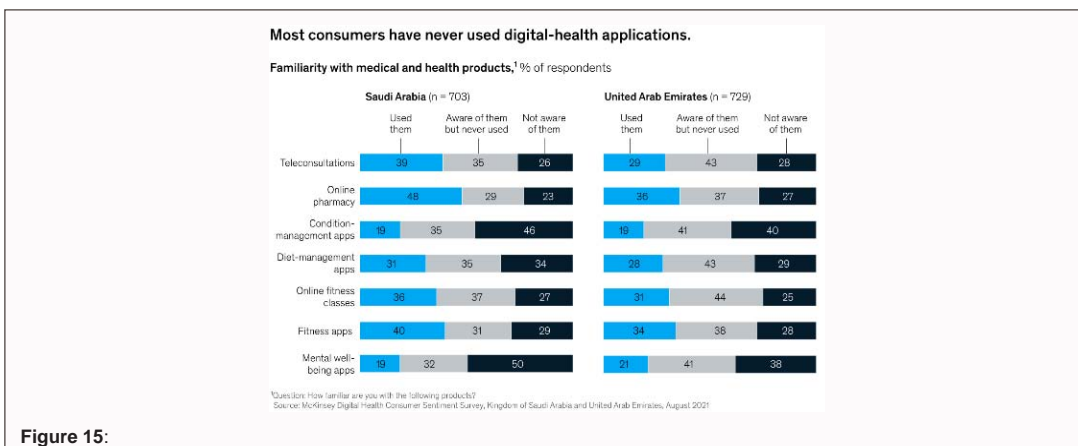


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2. Data-Driven Healthcare:

The availability of vast health data (including electronic health records, wearables, and genomics) will drive personalized medicine and treatment plans.

Big data analytics and machine learning will play a pivotal role in identifying patterns, predicting disease outbreaks, and optimizing resource allocation.

3. Patient Empowerment:

Digital health tools empower patients by providing access to information, self-monitoring capabilities, and personalized health recommendations.

Health literacy will improve as individuals become more engaged in managing their well-being.

4. Collaboration and Partnerships:

Collaboration between governments, private sector companies, startups, and research institutions will accelerate digital health adoption.

Public-private partnerships will foster innovation and address healthcare challenges.

5. Regulatory Frameworks:

MENA countries will develop robust regulatory frameworks specific to digital health. These guidelines will ensure patient safety, data privacy, and ethical use of technology.

Regulatory clarity will encourage investment and promote responsible innovation.

6. Health Equity:

Digital health has the potential to bridge healthcare gaps and improve equity. Efforts should focus on reaching underserved populations, rural areas, and vulnerable communities.

Initiatives like mHealth (mobile health) can enhance access to healthcare services.

7. Investment and Entrepreneurship:

The MENA region will witness increased investment in digital health startups. Entrepreneurs and investors recognize the sector's growth potential.

Incubators, accelerators, and venture capital will support innovative solutions.

8. Interoperability and Data Exchange:

Ensuring seamless data exchange between different health systems and providers is crucial. Interoperability standards will facilitate this process.

Health information exchanges will enable secure sharing of patient data.

9. Behavioral Change and Prevention:

Digital health interventions will focus on promoting healthy behaviors, preventive measures, and early detection.

Mobile apps, gamification, and social media will encourage positive health choices.

10. Ethical Considerations:

As digital health becomes more integrated into daily life, ethical questions will arise. Balancing innovation with privacy, consent, and transparency is essential.

Ethical AI and algorithmic transparency will be critical areas of focus.

Role of Stakeholders in Shaping the Future

In shaping the future of Digital Health in the Middle East and North Africa (MENA) region, stakeholders play a pivotal role. Let's explore their contributions:

1. Governments and Regulators:

Incorporating Innovation: Governments must integrate healthcare innovation into their national agendas. This ensures support for the healthcare sector's work.

Timely Regulations: Regulators need to adopt regulations swiftly to keep pace with technological changes. Encouraging innovation requires collaboration among government agencies to create frameworks for future

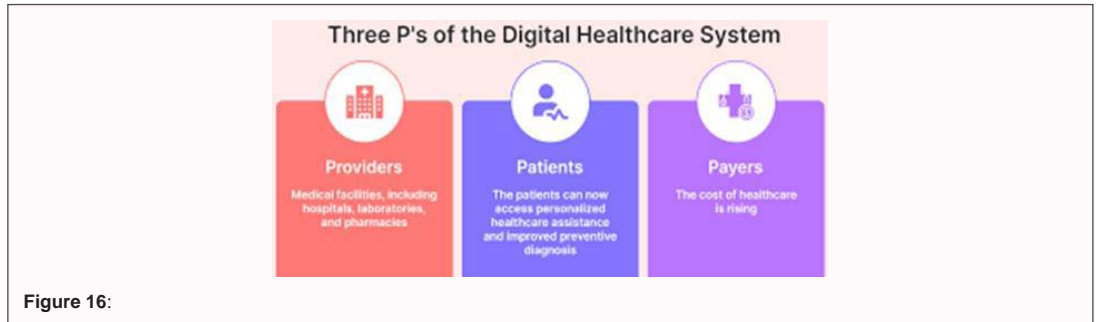


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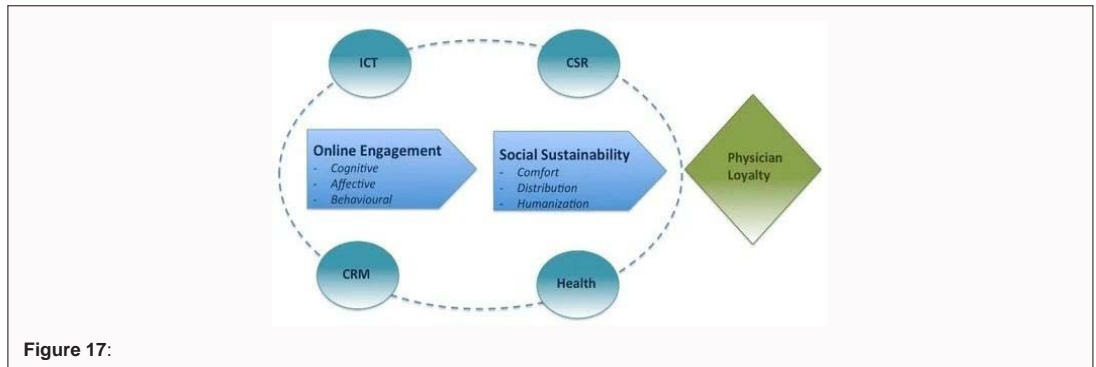


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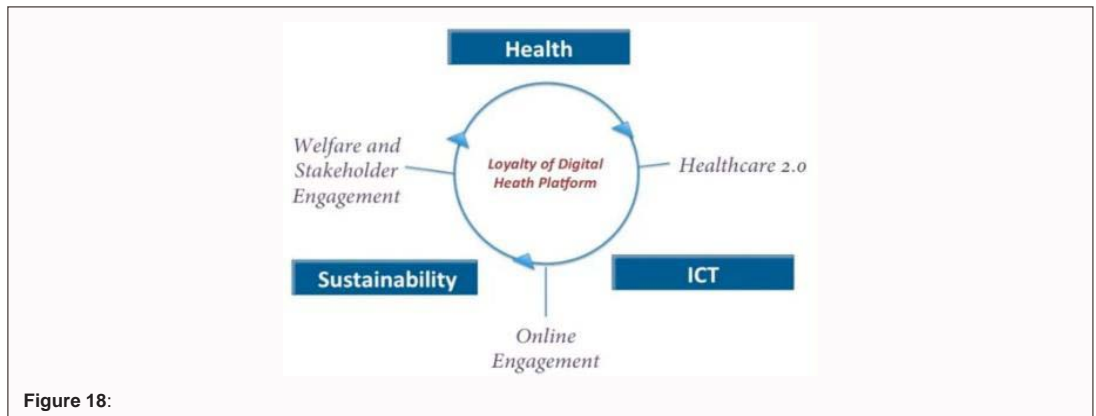


Figure 18:

healthcare regulation.

Patient-Centric Policies: Including patient representatives in policy design enhances patient-focused healthcare delivery.

2. Healthcare Providers:

Patient Experience: Providers should develop strategies emphasizing patient experience, personalization, and coordinated care.

Collaboration: By working together, providers can craft strategies and policies to leverage transformative forces in healthcare.

Data Infrastructure: Providers play a crucial role in developing the necessary data infrastructure.

3. Private Sector and Startups:

Innovation and Investment: Private companies and startups drive innovation. Their investment in digital health solutions accelerates progress.

Partnerships: Collaborating with other stakeholders fosters creativity and supports sustainable initiatives.

4. Research Institutions and Academia:

Knowledge Generation: Research institutions contribute to evidence-based practices and inform policy decisions.

Training and Education: Academia trains future healthcare professionals, ensuring a skilled workforce.

5. Patients and Communities:

Engagement: Patients' active involvement in their health journey is essential. Digital health tools empower patients to manage their well-being.

Advocacy: Communities can advocate for equitable access, privacy, and ethical use of technology.

6. Technology Companies and Innovators:

Technological Solutions: These stakeholders create and refine digital health tools, driving progress.

Interoperability: Ensuring seamless data exchange and interoperability is critical for effective healthcare systems.

7. Investors and Venture Capitalists:

Financial Support: Investors play a vital role by funding startups and initiatives.

Risk-Taking: Venture capitalists take calculated risks, enabling disruptive innovations.

By collaborating across these stakeholder groups, MENA can shape a future where digital health transforms healthcare delivery, enhances patient outcomes, and ensures comprehensive well-being

Conclusion

MENA's digital health journey holds immense promise. By addressing challenges, leveraging opportunities, and fostering collaboration, the region can achieve transformative healthcare outcomes.

Recommendations

1. **Policy Alignment:** Governments should align policies with digital health goals.
2. **Investment:** Encourage private investment in startups and research.
3. **Capacity Building:** Invest in workforce training.
4. **Ethical Frameworks:** Prioritize patient privacy and data security.
5. **Community Engagement:** Involve patients and communities in shaping digital health initiatives.

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