

The future of aging: Recent breakthroughs in geriatric healthcare



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Abstract

The demography of the population across the world is aging at an alarming rate and hence there is a need to focus on the geriatric healthcare services. This aims to discuss the new developments in geriatrics over the past several years based on technological solutions, alterations in the approach to the patient's care, and strategies to improve the quality life of elders. Thus, we consider the opportunities provided by telehealth and remote monitoring for the enlargement of the array of services for patients living in rural or underserved areas. Also, the integrated care concept, which relies on the cooperation between different disciplines and puts the focus on patient's needs exposed in the case of elderly individuals with multimorbidity. By accepting these opportunities, we might strive for the older adult population to get the appropriate, considerate, and efficient healthcare with the focus on their human rights to make individual choices.

Keywords: Geriatric healthcare, Telehealth, Remote monitoring, Multimorbidity

1. Introduction

The global population is in the middle of the significant demographic shift due to the fast aging of the population. This demographic change forms a new test and a new opportunity for healthcare delivery systems across the globe. A newer area of concern has been geriatric healthcare which deals with the healthcare problems of the elderly or the geriatric population segment and has been considered a pertinent area of focus in ensuring better health and functional ability in the aging population (1). It can be seen that conventional approaches to the delivery of health care do not hold much value when it comes to managing numerous aspects of health associated with elderly individuals depending on the interdependence of physical, cognitive, and social factors. Rigorous Geriatric Assessment, which is a mult consideration and top to bottom structure of consideration, has been perceived as a critical reason for geriatric consideration (2). This assessment is intended to reveal and solve numerous problems, such as possible health problems and attach age-related or other limitations, mental disorders, degree of psychological distress, levels of social support, and environmental barriers to develop personalized care plans that will allow the elderly to live their maximum possibilities and achieve the highest quality of life. In particular, this study addresses challenges and trends within modern healthcare addressing the utilization of telehealth and remote monitoring for older adults and patients from rural and underprivileged areas. Furthermore, it explores the modern trends that point to the integrated care model that focuses on the comprehensive care with the use of interprofessional

relations and the patient-centered care approaches in the management of complex health conditions of most elderly patients with multiple comorbidities. Admitting the importance of effective proactive healthcare, it stresses the importance of the use of preventative means, including cognitive training programs and strategies acting against falls, for supporting health ageing and reducing the consequences of ageing (3).

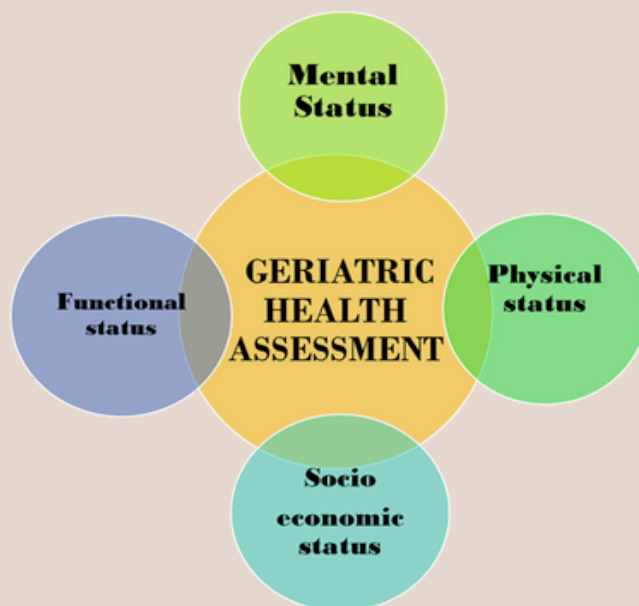


Figure 1. Technology enabled caregiving

Technological advancement and their applications in healthcare for the elderly population, it is considered that new technologies have the capacity to perform drastic changes in geriatric care due to its specific and peculiar characteristics. Among the key emergent modalities, there can be named telehealth and remote patient monitoring (4). These technologies facilitate telemedicine and tediagnosis, as well as real-time critical sign reassessment and extend essential care to elderly people with mobility disorders or to persons living in rural areas. Telemonitoring makes use of wearable sensors and connected devices that check different parameters of a patient's condition, which lead to early identification of complications and subsequent appropriate actions that can enhance the quality of life of a patient and keep hospitalization rates low. As for the changes on the level of technological solutions, there are two more important developments – the utilization of the smart home technologies and the development of the ambient assisted living environments (5). Sensors in smart home appliances as well as artificial intelligence can recognize the changes in the usual rhythm, falls, etc., and bring the appropriate reminders; this way, smart home is a safe environment for elderly people that fosters their independence while preserving their health. Also, the developments in robotics and other assisting devices help elderly people to be as independent as they can and participate in the community life to the maximum extent possible.

However, geriatric care is not without its hitches when it comes to the use of these technologies. Potential limitations include the level of digital media competence, cost implication, and the issue of appropriate use of the available data by all users, which presents some ethic issues (6).

As with most comprehensive care approaches, the integration and sustaining of its practices are major issues. Some of these challenges include, harnessing resource such as finances, organizational issues and workforce shortage. To ensure these challenges are solved, change will have to on innovative payment models, commitment from leadership and continuous workforce development (7).

2. Advancements in geriatric health care

2.1. On this rationale, precision medicine for age-related diseases can be defined.

Personalized care involves using genetic makeup, life and other aspects of an individual to design approaches to be used in the treatment process. It has been most useful in handling diseases that are associated with lifetime accumulated risks such as cancer, Alzheimer's disease and heart diseases. Some of the chronic diseases are caused due to the genetic mutations or biomarkers which, when diagnosed clearly, can help the doctor choose the treatment that will be apt for the patient hence reducing the post-treatment side effects (8).

2.2. Immunotherapy and targeted treatment for cancer

Immunotherapy means a treatment of cancer using the body's immune system; the targeted therapy has an approach of treating a particular weakness within the cancer cells. Both of these approaches are radically changing cancer management in the elderly provides possible less toxic options to standard chemotherapy (9).

2.3. New application of stem cells in degenerative diseases

Stem cell therapy is perspectives for the treatment of such diseases as Parkinson, Alzheimer, and osteoarthritis. Stem cells are unique cell due to their capability of deciding its offline and possibly replace damaged tissues or organs. Although still rather young, stem cell therapy has the potential to make older people with these crippling diseases live functional lives once again (10).

2.4. Minimally invasive surgical techniques

Laparoscopy and robotically assisted surgical techniques are being practiced now a day's in geriatric surgical management. These include making smaller cuts on patient's skin hence reducing both pain and time that a patient takes to recover than in the cases of an open surgery. This is especially so given the fact that; the aging population is often characterized by one or several health complications that put them at a higher risk of perioperative complications (11).

2.5. Technological advancements in rehabilitation

Rehabilitation in the geriatric population is becoming more and more technologically advanced and allowing the patient to return to or achieve greater independence after an illness or injury. Other advanced technologies have also proven helpful the traditional closed-door therapy by coming up with efficient gadgets like virtual reality, robotic exoskeletons, and wearable sensors (12).

2.6. Effective care for the elderly's mental health

Perceiving the issue of mental health in elderly as crucial, the focus on geriatric mental health is emerging. Such a role is occupied by new therapeutic approaches associated with non-invasive brain stimulation regarding depression and other mental disorders in elderly people who may experience significant adverse effects from medications or may have suboptimal responses to pharmacotherapy (13).

2.7. Geriatric palliative care

As a Growing Field Palliative care involves the delivery of care that aims to relieve patients' physical, psycho-social, and spiritual suffering due to serious illnesses (14).

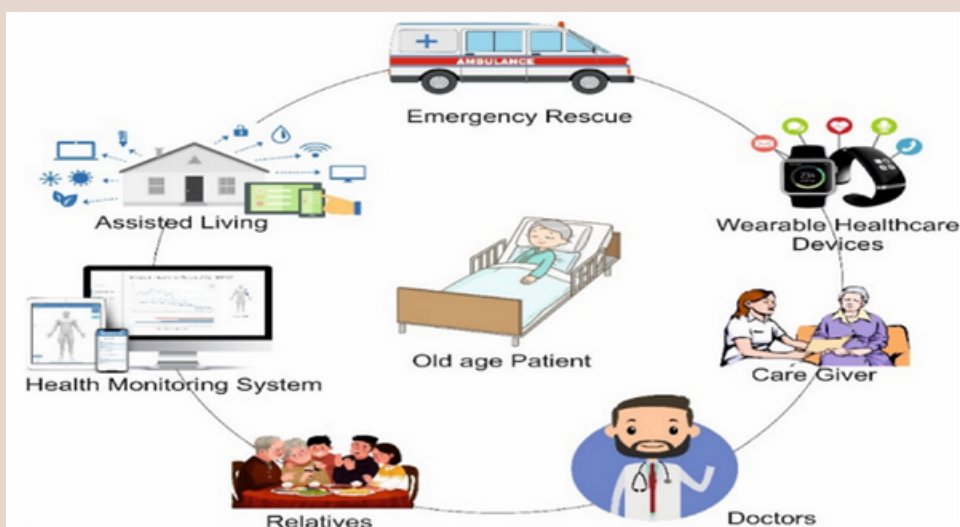


Figure 2. Elderly patients supportive care system (15)

3. Conclusion

Improvements in geriatric health care as described above, which may ultimately lead to significant changes in the treatment of elderly patients, it is essential to recognize the significant issues associated with their implementation and seek to eliminate them in order to achieve the best possible effect for all patients with Parkinson's disease, dementia, and other age-related conditions. Thus, it is crucial to continue investing in the research as the healthcare system for the elderly has more room for improvement.

4. Future perspective

A Future of hope and well-being for older adults in the field of geriatric healthcare is rapidly evolving, with recent advancements in treatments offering unprecedented opportunities to enhance the well-being and longevity of older adults. From personalized medicine tailored to individual needs to ground-breaking therapies such as immunotherapy and stem cell therapy, we are witnessing a significant shift in how we approach age-related diseases and conditions. The journey towards optimizing geriatric healthcare is ongoing, but with continued dedication and a commitment to compassionate, patient-centred care, the future holds immense promise for older adults and the generations to come.

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