RESEARCH ARTICLE

Effectiveness of Primary Healthcare System in Addressing the Needs of the Aging Population: An Evaluation of the National Program for Elderly Care

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Abstract

Introduction: Worldwide healthcare systems are facing formidable difficulties due to the aging population and longer life expectancy. Oman's National Elderly Care Program (ECP) seeks to address these challenges by providing comprehensive services through primary healthcare (PHC). Our review evaluates the effectiveness of Oman's PHC system in meeting the needs of citizens aged >60 years.

Methods: A review study used a national data from the PHC Information System, analyzing 17,243 Omani citizens aged >60 years, enrolled in 2023. Descriptive statistics and Looker Studio visualizations covered program coverage, referral patterns, health condition prevalence, functional status, and register activity. ***Results:*** Across all governorates, 35% of the overall rate of the target population met. We observed significant variations in program coverage, with Al Dhahirah achieving the highest rate (86% of its target population). Conversely, governorates such as Musandam, Muscat, and Al Wusta exhibited the lowest rate, < 30%. Institutional referrals were equal for both, with self-recommendations accounting for 22% and community referrals for 22%. North Al Batinah governorate had the highest total number of referrals, 25%. Conversely, Al Wusta had the lowest total number of referrals, 1%. The initial screening revealed that the prevalence of DM varied from 2% in Al Buraymi to 16% in Al Wusta, while the incidence of hypertension ranged from 1% to 19% across different governorates. We classified older adults as either independent or active, Al Wosta showed higher proportions of partially dependent individuals. The registration dynamics exhibited noticeable elevated rates of deaths variations.

Conclusions: Despite the low aggregate rate of target population fulfillment nationwide, the program is encountering difficulties in ensuring equitable coverage and fulfilling a variety of health requirements. A need for increased outreach and education in underprivileged areas, effective systems for ongoing monitoring and assessment, tailored care strategies, and improved geriatric education and healthcare facilities.

Keywords: Elderly Care; Elderly Assessment; Comprehensive Geriatric Assessment (CGA); Geriatric Program; Oman.

Take-home message

In 2023, the assessment of Oman's National Elderly Care Program (ECP) reveals a multifaceted array of successes and obstacles. Although the program exhibits strengths and disparities in program coverage, the diverse health requirements and varying functional statuses of the elderly across governorates require targeted interventions. The ECP's effectiveness can be optimized by addressing these challenges through targeted outreach, enhanced referral mechanisms, regional capacity building, personalized care plans, and continuous monitoring, thereby promoting healthy aging and improving the quality of life for Oman's geriatric population.

Introduction

Globally, there is a significant demographic shift characterized by increasing life expectancy and declining fertility rates, particularly in low-to-middle-income countries [1]. This phenomenon is causing a significant increase in the elderly population. The number of individuals aged 80 and above is expected to increase dramatically, from 126.5 million in 2015 to 446.6 million by 2050. This demographic trend presents considerable challenges to healthcare systems worldwide [2][3]. The increased life expectancy is associated with a higher prevalence of chronic conditions and age-related disabilities, such as respiratory disorders, diabetes, sensory and cognitive impairments, and possible physical injuries. Variations in lifespan and access to healthcare resources across different nations influence the incidence of these conditions [4][5][6]. The increasing elderly population, particularly those aged 80 and above, calls for a thoroughly planned long-term healthcare service delivery system to facilitate the pronounced impact on the elderly due to their extended lifespans [7][8][9][10][11].

The World Health Organization (WHO) advocates "healthy aging," which it defines as maintaining the functional ability that enables an individual’s well-being throughout their lifespan. The WHO's Public Health Framework (PHF) on Healthy Aging emphasizes the importance of preserving both intrinsic and functional capabilities to effectively address the challenges posed by an aging global population [12][13][14].

Oman, with a national population of 3,476,382 in 2023, includes 166,464 individuals aged 60 and above, representing 4.79% of the Omani population. By 2040, projections indicate that the number of elderly people in Oman will rise to 376,716, accounting for 11.80% of the population [15][16]. To address the healthcare needs of this demographic, the Ministry of Health (MOH) has implemented the National Program for Elderly Care [17]. The MOH in Oman administers a comprehensive PHC system across 11 governorates (Al Dakhliyah, Al Dhahirah, Al Buraymi, Al Wusta, Dhofar, Musandam, Muscat, North Al Batinah, North Ash Sharqiyah, South Al Batinah, and South Ash Sharqiyah), which includes 192 PHCs, 21 extended centers, and 50 hospitals [18]. These healthcare facilities act as the initial point of contact for elderly patients, providing a wide range of services, including curative and preventive care. The system, which offers free services to citizens and affordable options for non-citizens, aims to promote equal access to healthcare, self-reliance, and

community participation [19][20].

The Elderly Care Program (ECP) in Oman, initiated in Al Dhakhalia in 2003 and implemented nationwide across Primary Healthcare Centers (PHCs) in 2011, has demonstrated several positive outcomes, which justified its expansion [21]. Cost-effectiveness was a crucial factor in its success. A 2007 cost analysis revealed that community health care services were significantly more economical compared to tertiary and secondary care. For instance, a single patient visit by a community health nurse costs approximately 3.620 Omani Rials (USD 9.5), in stark contrast to the 50-75 Omani Rials (USD 130-180) for a day's stay in a tertiary-level hospital. This considerable cost savings was a strong motivator for the program's nationwide implementation [22].

The ECP's focus on community-based interventions aligns with global healthcare trends, which have been shifting towards preventive rather than curative care. This aligns with international best practices and strengthens the case for the program's expansion. Furthermore, Oman's changing demographics, including a rapidly growing and aging population and an increase in lifestyle-related chronic diseases, prompted the strategic development of the ECP. By proactively addressing these emerging health challenges, the program demonstrated its long-term value to the nation's healthcare system. A key strength of the ECP was its integration into the existing primary healthcare (PHC) structure. Rather than creating an independent service, this approach reinforced and enhanced the current system, leading to a more efficient and cost-effective use of resources [21][22].

The program, in partnership with the Ministry of Social Development (MOSD), focuses on the medical and social needs of the elderly, referring relevant cases to MOSD's social workers [17][21]. To ensure targeted care, each PHC establishes an annual target group of elderly patients in January each year, based on updated data from the National Center for Statistics and Information (NCSI). Comprehensive assessments are a cornerstone of the ECP, encompassing socioeconomic, physical, and psychological aspects. During the initial visit, healthcare providers use various tools, such as the Mini-Mental State Examination (MMSE) [23], the Geriatric Depression Scale, and pressure ulcer risk assessment using the Braden Scale [24], to evaluate the patient's condition. Every six months, healthcare providers schedule follow-up visits for vital checks and blood sugar monitoring, and conduct annual comprehensive geriatric assessments to ensure timely interventions and optimized care [17][25].

The ECP employs a multi-dimensional approach, integrating assessments of cognitive function, socioeconomic context, functional independence, mental health, and nutritional status. These assessments contribute to an overall score that helps classify the patient's level of function and guides appropriate interventions [26]. [Figure 1]

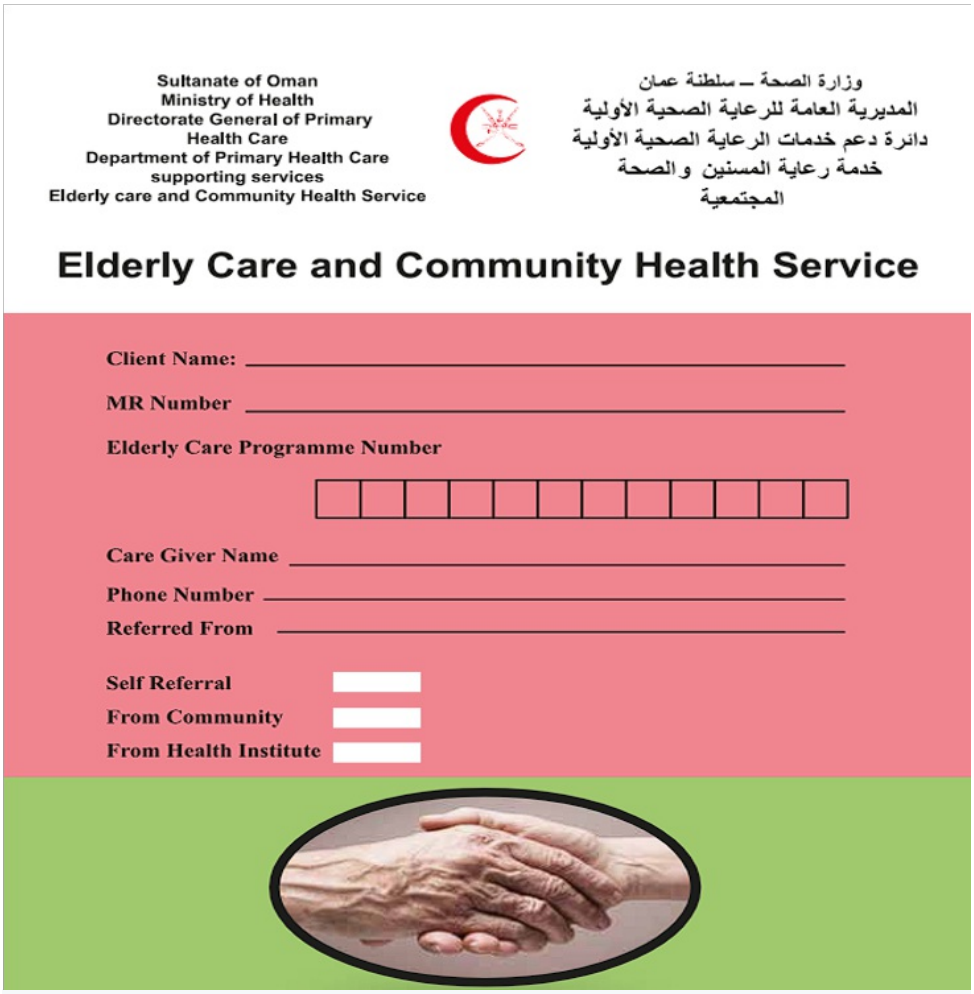

Figure 1. Elderly Care and Community Health Service Booklet

Nursing staff play a critical role in this process, conducting thorough examinations that include recording vital signs, cognitive function, mental health, nutritional status, and physical functional capacity. Physicians further assess patients by reviewing their medical history, conducting physical examinations, and performing laboratory investigations. When necessary, referrals to specialized care ensure comprehensive and holistic treatment [17][21][22]. The program imposes coherent follow-up visits every six months, involving checks of vital signs and blood sugar levels, along with an annual comprehensive geriatric assessment. This systematic approach, which integrates community health nursing, aims to optimize resource utilization and address the diverse needs of Oman's ageing population.

The National Program for Elderly Care utilizes a comprehensive geriatric assessment (CGA) tool that integrates scores from various assessments, including the Mini-Mental State Examination (MMSE), Socio-Economic Environmental Assessment, Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), Modified Mini-Mental State Examination, Geriatric Depression Scale, and Mini Nutritional Assessment (MNA) [23][27][28][29][30][31][32][33][34]. This multi-dimensional approach enables a thorough evaluation of the individual's cognitive function, socioeconomic and environmental context, functional independence, mental health, and nutritional status. Each assessment contributes to an overall score that is interpreted to classify the patient’s level of function and guide appropriate interventions. For example, for individuals with low scores on the MMSE, interventions may include cognitive rehabilitation exercises, medication to

manage symptoms, and caregiver support programs to provide education and resources [17][21][22]. For those identified with depression through the Geriatric Depression Scale (GDS), interventions might involve counselling services, and possibly pharmacological treatments to help improve mental health and quality of life. Additionally, for elderly individuals flagged by the Mini Nutritional Assessment (MNA) as being at risk of malnutrition, interventions could include nutritional counselling, meal planning assistance, and supplementation programs to ensure adequate nutrient intake. Community nurses can provide large-scale clinical interventions, including dressing, diabetic foot debridement, intravenous cannulation, and stabilizing fractures. Furthermore, community nurses engage a skilled physiotherapist as a core member to assist the elderly with balance, walking, occupational therapy, and basic speech-language pathology. These interventions not only address the specific needs identified through the assessments but also aim to improve the overall well-being and functional independence of elderly individuals [17][22].

This classification system categorizes individuals into groups such as "Independent/Active," "Semi-Independent" "Semi-Dependent," and "Dependent/Retired." The "Independent/Active" category includes individuals who maintain full independence and actively participate in daily activities without assistance. The "Semi-Independent" category encompasses those who can perform most activities independently but may require some assistance. The "Semi-Dependent" group includes individuals who need substantial assistance in carrying out daily activities, while the "Dependent" category comprises those who are fully dependent on caregivers for daily activities. The scoring process is critical in determining these classifications, ensuring that everyone's individual needs are accurately identified and addressed [35][36][37][38].

The program's structured clinical protocol, which aims to enhance the independence and well-being of the elderly, underscores its success. Nurses trained in elderly care play a central role in creating a supportive environment, empowering patients and their families in decision-making, and facilitating collaboration among healthcare providers to ensure a continuum of care [17]. This comprehensive approach demonstrates the program's targeted objectives in promoting healthy ageing and improving the quality of life for Oman's elderly population. While the program's comprehensive design holds promise, it is important to evaluate its effectiveness and identify potential areas for improvement.

Prior research has highlighted the importance of considering regional and demographic variations in health outcomes and access to care among elderly populations. [39][40][41] Therefore, this study seeks to address the following research question: Are there significant differences in health outcomes, functional status, or access to care among elderly individuals enrolled in the National Program for Elderly Care across different governorates or demographic groups and to provide valuable insights that can inform evidence-based recommendations for refining ECP, ultimately improving the quality of life for Oman's ageing population.

Methods

Study Design, Recruitment, and Procedures

Oman is situated on the southeastern coast of the Arabian Peninsula. It shares land borders with Saudi Arabia, the United Arab Emirates, and Yemen, while also having maritime borders with Iran and Pakistan. [Figure 2]

A review study incorporated existing data from the MOH's Shifa 3+ Electronic Health System. The study population comprised all elderly citizens aged 60 and above enrolled in the National Program for Elderly Care from January 1,2023, to December 31, 2023. We retrieved data using "Shal" sheets, a web-based interface within the Shifa 3+ system, which is a MOH system. Elderly care nurses manually input the data from Shifa 3+ into Sahl.

Figure 2. Oman's Geographic Location

Sampling and Data Collection

In each governorate of Oman, elderly care nurses play a central role in the data collection process. They meticulously complete monthly reports about their patients, which include comprehensive information on various aspects of health and well-being. These reports are then manually entered into a centralized Google Sheets, which act as a repository for all elderly care data nationwide [42]. The Google Sheets are designed to automatically aggregate the data from all governorates, generating a detailed report and interactive dashboard summarizing the key findings.

This aggregated data offers a holistic view of the program's reach, referral patterns, prevalent health conditions, and the functional status of the elderly population across Oman. Supervisors of the elderly care and community health services program at the headquarters then thoroughly review and analyze the compiled reports and dashboards. This analysis serves as a cornerstone for assessing the program's effectiveness, identifying emerging trends, and making well-informed decisions regarding resource allocation and service enhancements. It is important to highlight that this research relied solely on existing Electronic Health Records (EHRs) from the Shifa 3+ system, without the use of any specialized sample collection or laboratory evaluation protocols. The focus remained on extracting pertinent information related to program reach, referral patterns, health conditions, and the functional status of the elderly population.

Statistical Analysis

To ensure accuracy and consistency, the collected data underwent a rigorous review to remove duplication and preparation. The supervisors of the elderly care and community health services program then utilized Looker Studio (formerly Google Data Studio) to visualize and analyze the data, generating interactive dashboards and comprehensive reports. [43] The results analysis involved utilizing various graphical and tabular representations to depict the data effectively. We employed graphs to visually represent the distribution and comparison of data points, including target population achievements across different governorates, frequencies of different types of visits, proportions of referrals by source, and the prevalence of health conditions among elderly individuals. We calculated the rate of returning patients by expressing the number of follow-up visits as a percentage of the total number of visits (first visits plus follow-up visits) for each gender and governorate. Similarly, the proportion of referrals by source for each gender illustrated the relative contribution of each referral source (Self-Referral, From Community, From Health Institution) to the total referrals. We used tables to present numerical data in a structured manner, highlighting the total number of visits, gender percentage distribution, sex ratio, correlations between referral types, and specific details on patient numbers and health conditions. The analysis utilized descriptive statistics to summarize and interpret the data. We calculated percentages, ratios, and averages to highlight key findings and trends. We presented the results clearly and concisely, emphasizing the most relevant insights for each section of the analysis.

Ethical Approval

We used anonymized data and thus, the ethical study approval was not required as it was based on secondary data extracted from "Shal" sheets, a web-based interface within the Shifa 3+ system, a MOH system. The data collection and analysis processes adhered to the privacy and confidentiality regulations governing the use of patient information within the Oman MOH. This study does not contravene the internal institutional review board and adheres to the *Declaration of Helsinki*.

Results

Demographic Features of the Elderly

Across all governorates, 17243 out of 49023 (35%) of the overall target population was met nationally. Al Dhahirah governorate had the highest rate, with 2,970 out of 3,439 (86%) of its target population achieved. On the contrary, Al Wusta 139 (9%) out of 1496 and Muscat 1016 (9%) out of 10722 governorates achieved the lowest rates. Notably, Al Dhahirah (86%) and Al Buraymi (83%) governorates outperformed their objectives, while North Al Batinah attained more than half of its target population at 4531 out of 8396 (54%). In contrast, governorates including Al Wusta, Musandam, and Muscat had very low accomplishment percentages, all below 30%. [Figure 3]

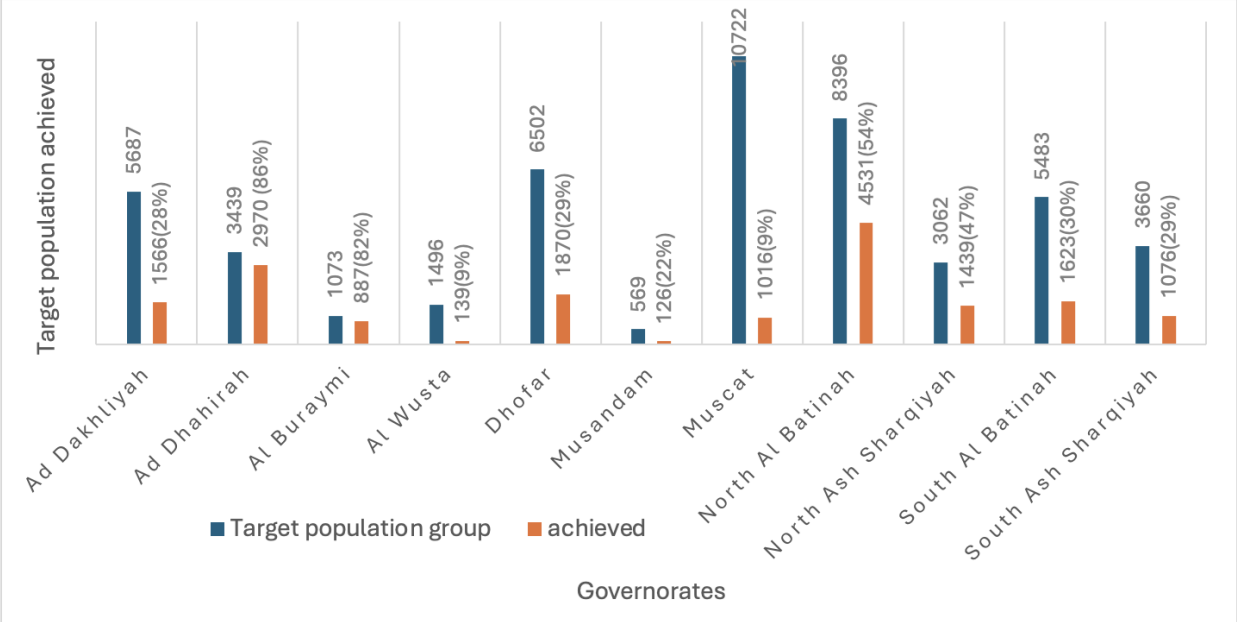

Figure 3. Target Population Achievement

The distribution and frequency of visits throughout the governorates revealed that North Al Batinah governorate had the most initial visits, with 1,972 (26%) males and 2,559 (26%) females. Al Dakhliyah governorate had the most follow-up visits, with 2,034 (17%) males and 2,520 (18%) females. South Al Batinah had a substantial number of female self-referrals 626 (47%), whereas North Al Batinah had the most male self-referrals 164 (26%). North Al Batinah also ranked first in community referrals for both males 157 (38%) and females 203 (37%). North Al Batinah had the highest number of

referrals to health institutions, with 1,526 (25%) and 1,994 (25%) males and females respectively. [Figure 4]

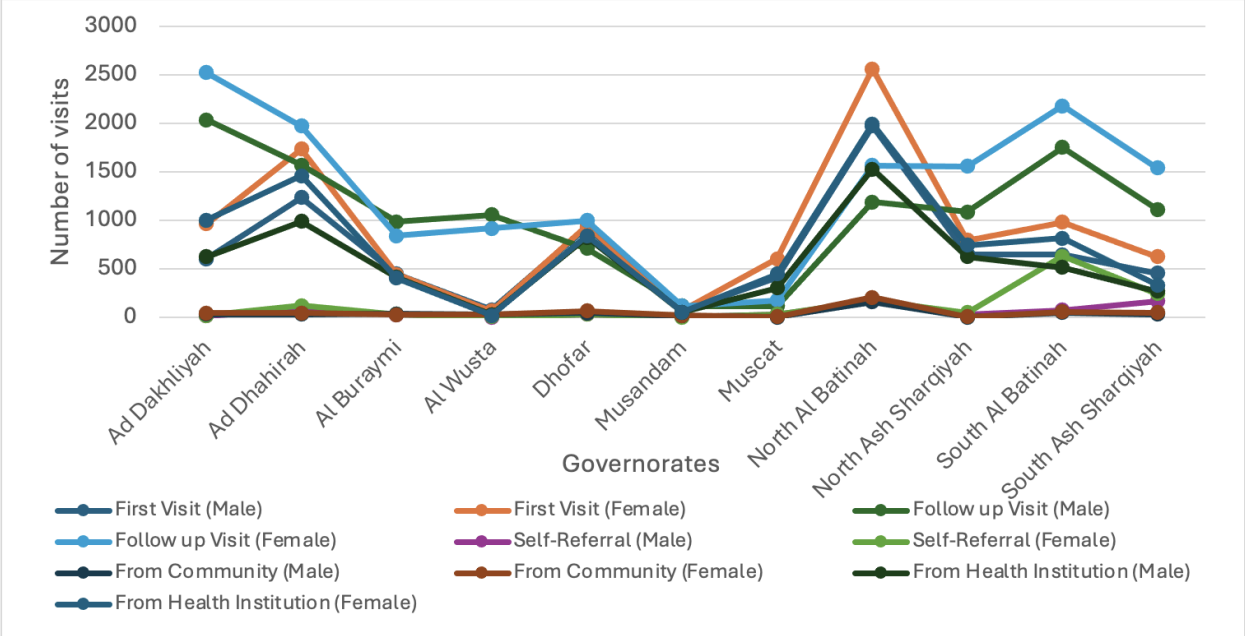

Figure 4. Distribution and Frequency of Different Types of Visits

In comparison, Al Wusta governorate had the highest percentage of follow-up visits for both males 1057 (93%) and females 914 (94%), indicating a greater rate of returning patients. In Muscat, the highest percentage of first visits for females was 603 (78%), suggesting a prospective increase in the number of new female patients. Muscat also exhibited a high percentage of first visits 413 (78%) among males, although the trend is not as pronounced as it is among females. The percentage of follow-up visits was higher for males in most governorates. North Al Batinah governorate had the highest total number of referrals 4,213 (25%). Conversely, Al Wusta had the lowest total number of referrals 105 (1%). [Figure 5]

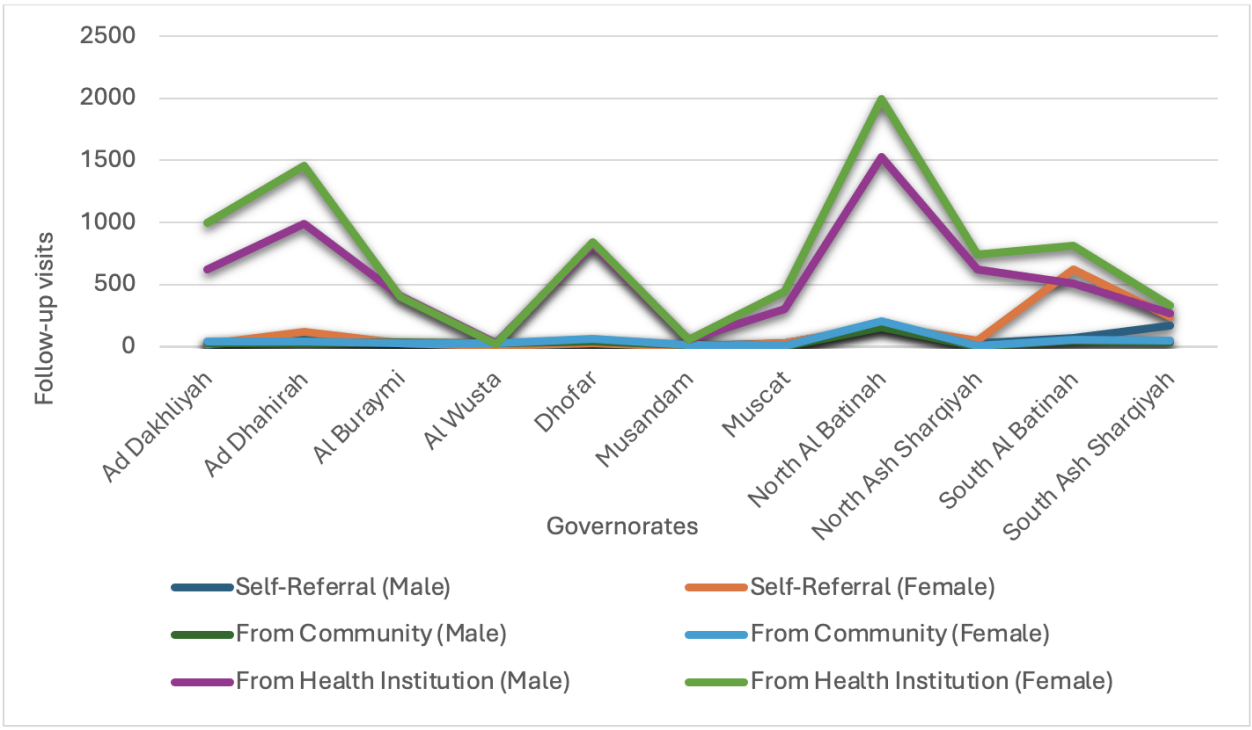

Figure 5. Distribution and Frequency of Different Types of Visits by Gender

For females, most referrals 8097 (81%) came from health institutions, followed by self-referrals 1323 (13%), and community referrals 413 (6%). For males, the pattern was similar, with health institutions accounting for 6156 (86%) of referrals, followed by self-referrals 626 (9%), and community referrals 413 (6%). In both genders, health institutions were the predominant referral source, but there was a slightly higher reliance on self-referrals among males. [Table 1]

Table 1. Number of Referrals by Source, Governorate, and Gender.

Governorate	Self-Referral (Male)	Self-Referral (Female)	From Community (Male)	From Community (Female)	From Health Institution (Male)	From Health Institution (Female)	Total
Al Dakhliyah	12 (1%)	19 (1%)	29 (2%)	44 (3%)	622 (48%)	999 (52%)	1725
Al Dhahirah	91 (3%)	120 (4%)	31 (1%)	43 (2%)	988 (36%)	1,460 (64%)	2733
Al Buraymi	27 (3%)	30 (2%)	35 (4%)	27 (2%)	411 (44%)	403 (56%)	933
Al Wusta	0 (0%)	6 (5%)	25 (24%)	28 (27%)	27 (26%)	19 (74%)	105
Dhofar	30 (2%)	31 (1%)	41 (2%)	65 (4%)	823 (45%)	839 (55%)	1829
Musandam	6 (4%)	1 (1%)	12 (8%)	17 (12%)	53 (37%)	53 (63%)	142
Muscat	29 (4%)	31 (1%)	1 (<1%)	7 (1%)	303 (37%)	445 (63%)	816
North Al Batinah	164 (4%)	169 (4%)	157 (4%)	203 (5%)	1,526 (36%)	1,994 (64%)	4213
North Ash Sharqiyah	26 (2%)	49 (3%)	2 (<1%)	7 (0%)	624 (43%)	743 (57%)	1451
South Al Batinah	73 (3%)	626 (29%)	48 (2%)	56 (3%)	512 (24%)	813 (76%)	2128
South Ash Sharqiyah	168 (16%)	241 (11%)	32 (3%)	47 (4%)	267 (25%)	329 (75%)	1084
Total	626 (9%)	1,323 (13%)	413 (6%)	544 (6%)	6,156 (86%)	8,097 (81%)	

Special Services for the Elderly

North Al Batinah had 796 (18%) males and 1,027 (23%) females referred to physiotherapy. Al Wusta had the least referrals 16 (12%) males, and 13 (9%) females. Al Dhahirah led with referrals for social care 167(6%) males, and 231(8%) females. The lowest referrals for social care services among males were in Al Wusta and Musandam, both with zero cases. For females, Al Wusta had the lowest number, with only 1 (1%) case. Community care referrals were significant for males 411(46%) in Al Buraymi. While community care referrals were significant for females 72(4%) in South Al Batinah. The lowest male referrals were in Al Wusta, with zero cases, and similarly, Al Wusta also had zero referrals for females. In nutrition services, Al Dhahirah had the highest number of male referrals, with 1.109 (37%) cases of the total screened. For female referrals, Al Dhahirah had the highest number, with 1,556 (52%) cases of the total screened. On the lower end, both Al Buraymi and South Ash Sharqiyah had the least male referrals, each with 12 (1.35%) cases of their respective total screened populations. For females, Al Buraymi and Al Wusta had the lowest referrals, with 12 (1.35%) cases (1.35%) and zero (0.00%) cases respectively. Figure 6 shows the distribution and frequency of types of referrals.

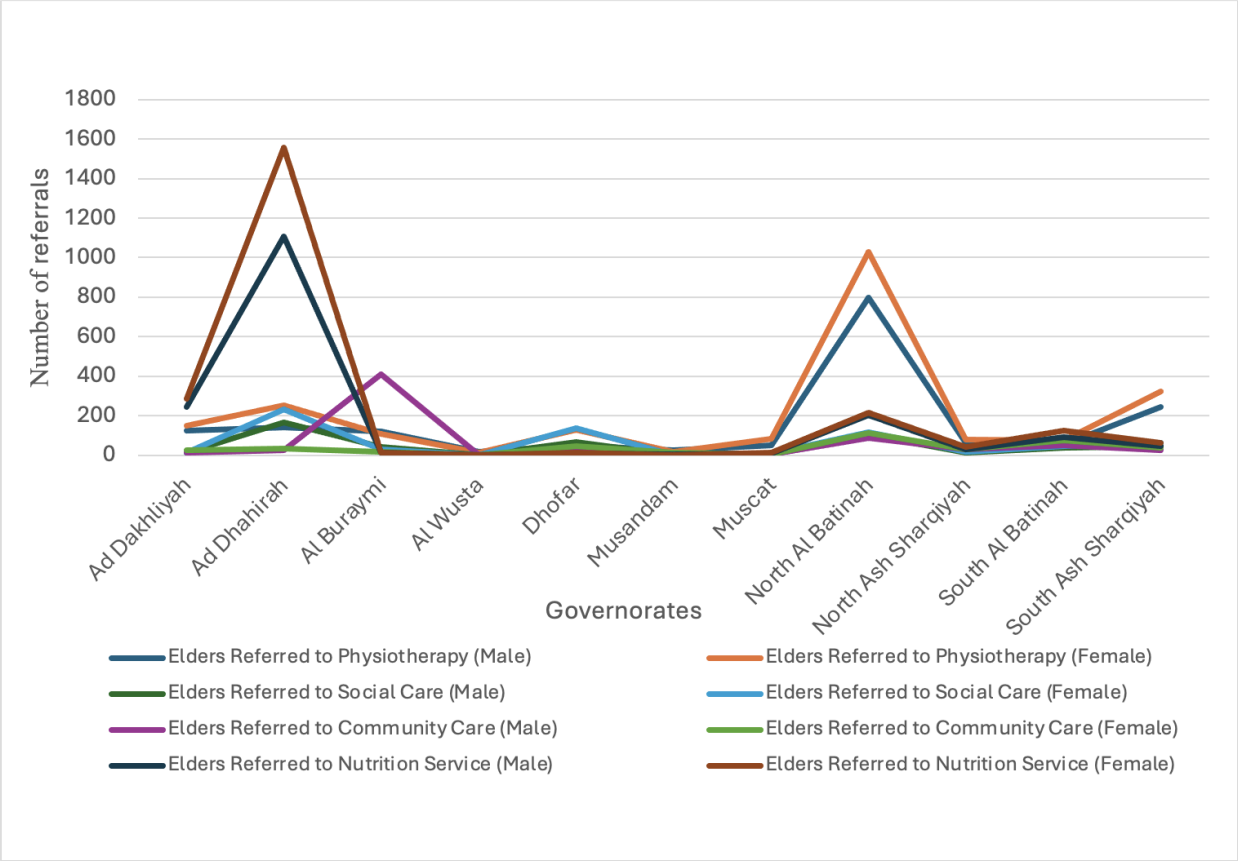

Figure 6. Distribution and Frequency of Different Types of Referrals by Gender

Special Care Referrals

Referrals for secondary/tertiary care were highest in Al Dhahirah 195 (32%) males, 229 (36%) females) South Ash Sharqiyah had the least referrals 7 (1%) males, and 10 (2%) females. Figure 7 exhibits the number of referrals to secondary and tertiary care based on governorate and gender.

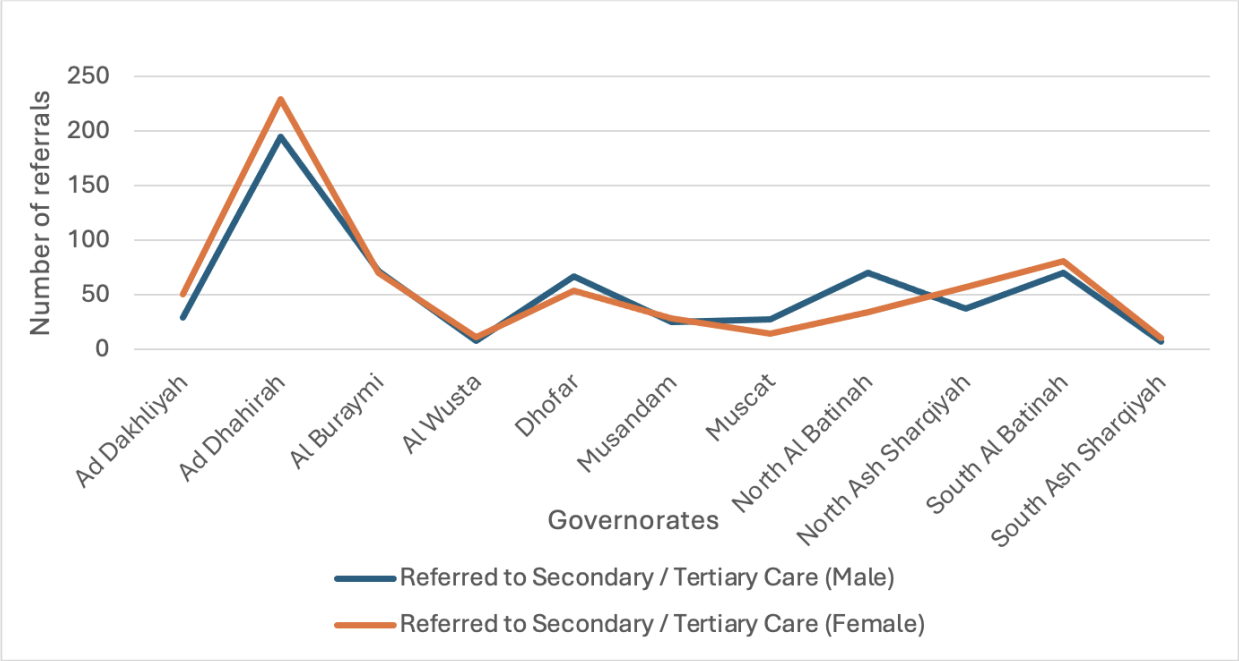

Figure 7. Number of Referrals to Secondary/Tertiary Care by Governorate and Gender.

Elderly Health Conditions Screening Outcomes During Initial Visits

In Al Dakhliyah governorate, the total number of the elderly screened was 1,566. Among them, diabetes was found in 42 males (3%) and 53 females (3%). Hypertension was recorded in 33 males (2%) and 54 females (3%). Dyslipidaemia care was provided to 29 males (2%) and 47 females (3%). Thyroid disorders services were received by 6 males (0%) and 12 females (1%). Prostatic disorders were identified in 9 males (1%). Malignancies were found in 8 males (1%) and 1 female (0%). Dementia cases included 2 males (0%) and 3 females (0%). Depression among 4 males (0%) and 1 female (0%). Blindness was noted in 2 males (0%) and 10 females (1%). There was poor vision in 18 males (1%) and 7 females (0%). Partial deafness was reported in 4 males (0%) and 2 females (0%), while deafness affected 2 males (0%) and 2 females (0%).

In Al Dhahirah governorate, 2,970 elderly were screened. Diabetes was diagnosed in 77 males (3%) and 92 females (3%). Hypertension was observed in 58 males (2%) and 59 females (2%). Dyslipidaemia care was given to 87 males (3%) and 127 females (4%). Thyroid disorders services were accessed by 16 males (1%) and 44 females (1%). Prostatic disorders were found in 52 males (2%). Malignancies were not reported in either gender. Dementia cases included 22 males (1%) and 10 females (0%). Depression was noted in 8 males (0%) and 5 females (0%). Blindness was present in 28 males (1%) and 35 females (1%). Poor vision was reported in 49 males (2%) and 73 females (2%). Partial deafness was seen in 38 males (1%) and 20 females (1%), while deafness affected 10 males (0%) and 8 females (0%).

In the Al Buraymi governorate, out of 887 elderly individuals screened, 14 males (2%) and 21 females (2%) were diagnosed with diabetes. Hypertension was recorded in 12 males (1%) and 10 females (1%). Dyslipidaemia care was provided to 9 males (1%) and 11 females (1%). Thyroid disorders services were received by 1 male (0%) and 1 female (0%). Prostatic disorders were identified in 9 males (1%). Malignancies were not reported in either gender. Dementia

cases included 5 males (1%) and 4 females (0%). Depression affected 1 male (0%) and 1 female (0%). Blindness was noted in 2 males (0%). Poor vision was present in 7 males (1%) and 4 females (0%). Partial deafness was reported in 10 males (1%) and 5 females (1%).

In Al Wusta governorate, 139 elderly were screened. Diabetes was found in 22 males (16%) and 11 females (8%). Hypertension was observed in 27 males (19%) and 16 females (12%). Dyslipidaemia care was given to 6 males (4%) and 7 females (5%). Thyroid disorders services were accessed by only 1 female (1%). Prostatic disorders were not reported in males. Malignancies, Blindness and Dementia were not reported in either gender. Depression was noted in 1 male (1%) and 1 female (1%). Poor vision was reported in 5 males (4%) and 2 females (1%).

In Dhofar governorate, the total number of elderly screened was 1,870. Among them, diabetes was found in 168 males (9%) and 184 females (10%). Hypertension was recorded in 166 males (9%) and 216 females (12%). Dyslipidemia care was provided to 76 males (4%) and 95 females (5%). Thyroid disorders services were received by 15 males (1%) and 57 females (3%). Prostatic disorders were identified in 14 males (1%). Malignancies were found in 2 males (0%) and 5 females (0%). Dementia cases included 7 males (0%) and 12 females (1%). Depression affected 5 males (0%) and 10 females (1%). Blindness was noted in 1 male (0%) and 1 female (0%). Poor vision was present in 49 males (3%) and 54 females (3%). Partial deafness was reported in 4 males (0%) and 4 females (0%). Deafness was observed in 3 males (0%).

In Musandam governorate, 126 elderly were screened. Diabetes was diagnosed in 6 males (5%) and 5 females (4%). Hypertension was observed in 12 males (10%) and 7 females (6%). Dyslipidemia care was given to 4 males (3%) and 4 females (3%). Thyroid disorders services were accessed by only 1 female (1%). Prostatic disorders were found in 6 males (5%). Malignancies were reported in 1 male (1%). Dementia cases were reported in 2 females only (2%). Depression was noted in 1 male (1%). Blindness was present in 1 male (1%). Poor vision was reported in 4 males (3%) and 2 females (2%). Partial deafness was seen in 1 male (1%).

In Muscat governorate, 1,016 elderly were screened. Diabetes was diagnosed in 119 males (12%) and 123 females (12%). Hypertension was recorded in 146 males (14%) and 193 females (19%). Dyslipidemia care was provided to 85 males (8%) and 103 females (10%). Thyroid disorders services were received by 13 males (1%) and 18 females (2%). Prostatic disorders were identified in 9 males (1%). Malignancies were found in 5 males (0%) and 5 females (0%). Dementia cases included 5 males (0%) and 2 females (0%). Depression affected 4 males (0%) and 4 females (0%). Blindness was noted in 4 males (0%) and 4 females (0%). Poor vision was present in 11 males (1%) and 19 females (2%). Partial deafness was reported in 7 males (1%) and 3 females (0%). Deafness was observed in 3 males (0%) and 1 female (0%).

In the North Al Batinah governorate, the total number of elderly screened was 4,531. Among them, diabetes was found in 357 males (8%) and 536 females (12%). Hypertension was recorded in 441 males (10%) and 645 females (14%). Dyslipidemia care was provided to 268 males (6%) and 387 females (9%). Thyroid disorders services were received by 18 males (0%) and 43 females (1%). Prostatic disorders were identified in 16 males (0%). Malignancies were found in 3

males (0%) and 1 female (0%). Dementia cases included 31 males (1%) and 22 females (0%). Depression affected 15 males (0%) and 14 females (0%). Blindness was noted in 12 males (0%) and 13 females (0%). Poor vision was present in 160 males (4%) and 185 females (4%). Partial deafness was reported in 9 males (0%) and 15 females (0%). Deafness was observed in 7 males (0%) and 5 females (0%).

In the North Ash Sharqiyah governorate, 1,439 elderly were screened. Diabetes was diagnosed in 85 males (6%) and 95 females (7%). Hypertension was observed in 89 males (6%) and 123 females (9%). Dyslipidemia care was given to 102 males (7%) and 104 females (7%). Thyroid disorders services were accessed by 6 males (0%) and 11 females (1%). Prostatic disorders were identified in 3 males (0%). Malignancies, Dementia and Blindness were not reported in either gender. Depression was noted in 1 male (0%). Poor vision was reported in 1 male (0%) and 3 females (0%).

In the South Al Batinah governorate, 1,623 elderly were screened. Diabetes was diagnosed in 117 males (7%) and 170 females (10%). Hypertension was recorded in 102 males (6%) and 142 females (9%). Dyslipidemia care was provided to 71 males (4%) and 94 females (6%). Thyroid disorders services were received by 4 males (0%) and 17 females (1%). Prostatic disorders were identified in 1 male (0%). Malignancies were found in 1 male (0%) and 1 female (0%). Dementia cases included 3 males (0%) and 11 females (1%). Depression affected 3 males (0%) and 2 females (0%). Blindness was noted in 1 male (0%) and 4 females (0%). There was poor vision in 22 males (1%) and 31 females (2%). Partial deafness was reported in 5 males (0%) and 4 females (0%). Deafness was observed in 2 males (0%).

In the South Ash Sharqiyah governorate, the total number of elderly screened was 1,076. Among them, diabetes was found in 70 males (7%) and 95 females (9%). Hypertension was recorded in 77 males (7%) and 131 females (12%). Dyslipidemia care was provided to 42 males (4%) and 48 females (4%). Thyroid disorders services were received by 8 males (1%) and 15 females (1%). Prostatic disorders were identified in 4 males (0%) and 3 females (0%). Malignancies were found in 2 males (0%). Dementia cases included 10 males (1%) and 2 females (0%). Depression affected 3 males (0%) and 4 females (0%). Blindness was noted in 1 male (0%) and 12 females (1%). Poor vision was present in 7 males (1%) and 4 females (0%). Partial deafness was reported in 4 males (0%) and 2 females (0%). Deafness was observed in 1 male (0%). Figure 8 exhibits the number of elderly patients diagnosed with health conditions at initial registration.

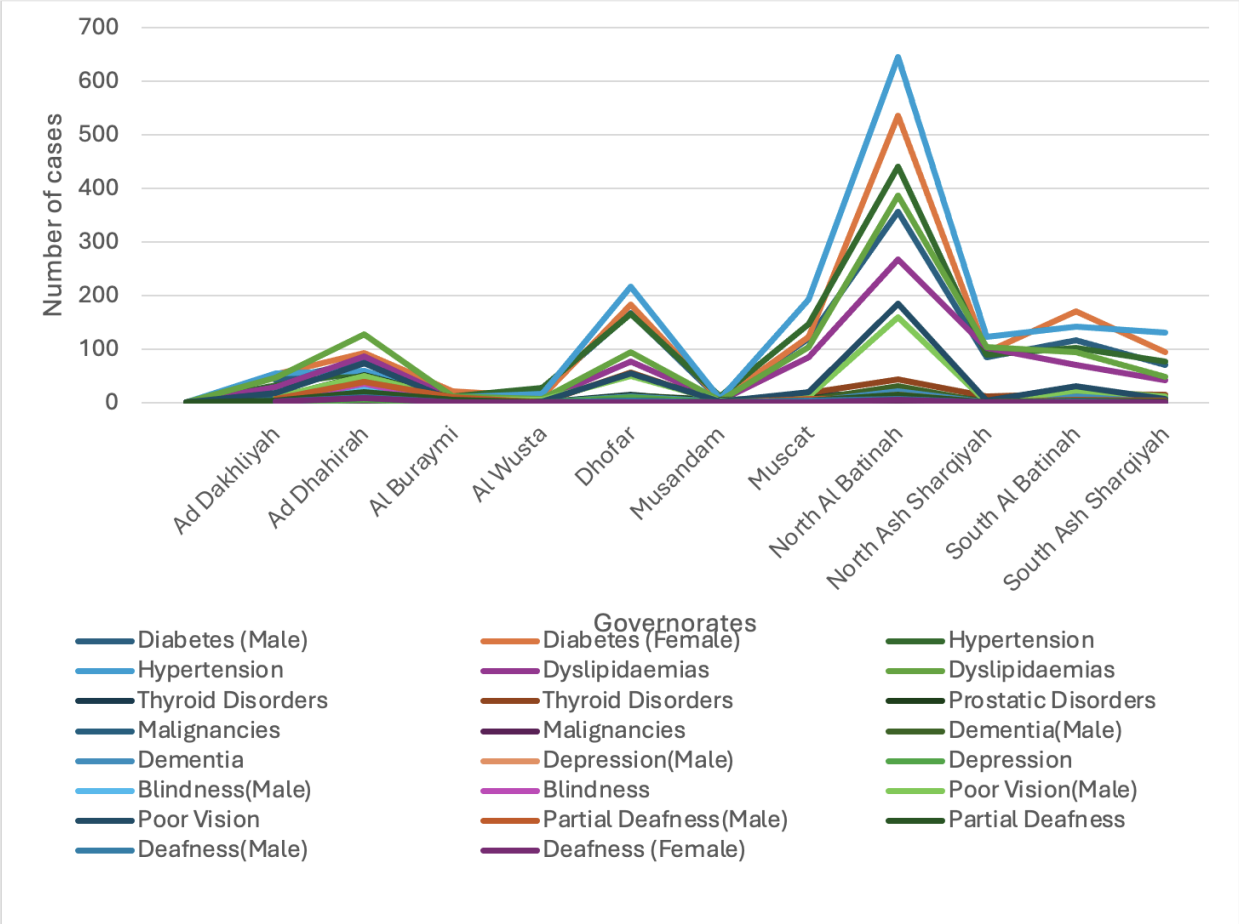

Figure 8. Number of Elderly Patients Diagnosed with Health Conditions during Initial Registration visits by Governorate and Gender

Elderly Health Conditions Screening Outcomes during Follow-up Visits

In the Al Dakhliyah governorate, 1,566 elderly were screened. Among them, 21 males (1%) and 46 females (3%) were diagnosed with diabetes. Hypertension affected 34 males (2%) and 30 females (2%). Dyslipidemia care was provided to 37 males (2%) and 50 females (3%). Thyroid disorders services were accessed by 9 males (1%) and 8 females (1%). Prostatic disorders were identified in 10 males (1%). Malignancies were not reported in either gender. Dementia cases included 2 males (0%) and 11 females (1%). Depression affected 3 males (0%) and 2 females (0%). Blindness was noted in 1 male (0%) and 14 females (1%). There was poor vision in 14 males (1%) and 14 females (1%). Partial deafness was reported in 1 male (0%) and 5 females (0%), while deafness affected 0 males and 1 female (0%).

In the Al Dhahirah governorate, 2,970 elderly were screened. Diabetes was diagnosed in 28 males (1%) and 36 females (1%). Hypertension affected 30 males (1%) and 40 females (1%). Dyslipidemia care was provided to 27 males (1%) and 29 females (1%). Thyroid disorders services were accessed by 5 males (0%) and 9 females (0%). Prostatic disorders were identified in 10 males (0%). Malignancies were not reported in either gender. Dementia cases included 3 males (0%) and 2 females (0%). Depression affected 1 male (0%) and 3 females (0%). Blindness was noted in 1 male (0%) and 3 females (0%). Poor vision was present in 5 males (0%) and 9 females (1%). Partial deafness was reported in 22 males (1%) and 17 females (1%), while deafness affected 1 male (0%) and 3 females (0%).

In Al Buraymi governorate, out of 887 elderly screened, 40 males (5%) and 45 females (5%) were diagnosed with diabetes. Hypertension was recorded in 42 males (5%) and 44 females (5%). Dyslipidaemia care was provided to 17 males (2%) and 28 females (3%). Thyroid disorders services were accessed by 4 males (0%) and 4 females (0%). Prostatic disorders were identified in 13 males (1%). Malignancies, Depression, blindness were not reported in either gender. Dementia cases included 3 males (0%) and 3 females (0%). Poor vision was present in 11 males (1%) and 12 females (1%). Partial deafness was reported in 27 males (3%) and 13 females (1%), while deafness affected 0 males and 0 females.

In the Al Wusta governorate, 139 elderly were screened. Diabetes was found in 22 males (16%) and 11 females (8%). Hypertension affected 27 males (19%) and 16 females (12%). Dyslipidemia care was provided to 6 males (4%) and 7 females (5%). Thyroid disorders services were accessed by 0 males (0%) and 1 female (1%). Prostatic disorders were identified in 2 males (1%). Malignancies of Dementia, Deafness and Partial Deafness were not reported in either gender.). Depression affected 0 males (0%) and 1 female (1%). Blindness was noted in 0 males (0%) and 0 females (0%). Poor vision was present in 5 males (4%) and 2 females (1%).

In the Dhofar governorate, the total number of elderly screened was 1,870. Among them, 108 males (6%) and 162 females (9%) were diagnosed with diabetes. Hypertension affected 101 males (5%) and 164 females (9%). Dyslipidemia care was provided to 19 males (1%) and 24 females (1%). Thyroid disorders services were accessed by 7 males (0%) and 13 females (1%). Prostatic disorders were identified in 4 males (0%). Malignancies were found in 1 male (0%) and 2 females (0%). Dementia cases included 5 males (0%) and 0 females. Depression affected 2 males (0%) and 1 female (0%). Blindness was noted in 1 male (0%) and 0 females. Poor vision was present in 8 males (0%) and 19 females (1%). Partial deafness was reported in 1 male (0%) and 3 females (0%), while deafness affected 0 males and 0 females.

In the Musandam governorate, 126 elderly were screened. Diabetes was diagnosed in 23 males (18%) and 29 females (23%). Hypertension affected 40 males (32%) and 42 females (33%). Dyslipidemia care was provided to 15 males (12%) and 16 females (13%). Thyroid disorders services were not accessed by males and were accessed by 1 female (1%). Prostatic disorders were found in 3 males (2%). Malignancies were reported in 1 male (1%). Dementia cases were not reported in males and were reported in 2 females (2%). Depression was noted in 1 male (1%). Blindness was present in 1 male (1%). Poor vision was reported in 4 males (3%) and 2 females (2%). Partial deafness was seen in 3 males (2%) and 1 female (1%).

In Muscat governorate, 1,016 elderly were screened. Diabetes was diagnosed in 8 males (1%) and 24 females (2%). Hypertension affected 15 males (1%) and 28 females (3%). Dyslipidemia care was provided to 15 males (1%) and 29 females (3%). Thyroid disorders services were accessed by 3 males (0%) and 10 females (1%). Prostatic disorders were identified in 1 male (0%). Malignancies, Dementia, Blindness, Poor Vision and Parital Deafness were not reported in either gender. Depression was noted in 2 males (0%) and 2 females (0%).

In the North Al Batinah governorate, a total of 4,531 elderly were screened. Among them, 121 males (3%) and 151 females (4%) were diagnosed with diabetes. Hypertension affected 109 males (2%) and 175 females (4%). Dyslipidemia

care was provided to 78 males (2%) and 129 females (3%). Thyroid disorders services were accessed by 6 males (0%) and 23 females (1%). Prostatic disorders were identified in 4 males (0%). Malignancies were not reported in either gender. Dementia cases included 3 males (0%) and 5 females (0%). Depression affected 1 male (0%) and 2 females (0%). Blindness was noted in 2 males (0%) and 4 females (0%). Poor vision was present in 3 males (0%) and 9 females (0%). Partial deafness was reported in 7 males (0%) and 5 females (0%), while deafness affected 0 males and 1 female (0%).

In the North Ash Sharqiyah governorate, 1,439 elderly were screened. Diabetes was found in 81 males (6%) and 182 females (13%). Hypertension affected 70 males (5%) and 134 females (9%). Dyslipidemia care was provided to 61 males (4%) and 61 females (4%). Thyroid disorders services were accessed by 8 males (1%) and 8 females (1%). Prostatic disorders were identified in 8 males (1%). Malignancies, Blindness and poor vision were not reported in either gender. Dementia cases included 1 male (0%) and 1 female (0%). was noted in 0 males and 0 females. Partial deafness was reported in 7 males (0%) and 1 female (0%), while deafness affected 1 male (0%) and 0 females.

In the South Al Batinah governorate, 1,623 elderly were screened. Diabetes was diagnosed in 105 males (6%) and 144 females (9%). Hypertension affected 78 males (5%) and 110 females (7%). Dyslipidemia care was provided to 17 males (1%) and 43 females (3%). Thyroid disorders services were accessed by 3 males (0%) and 4 females (0%). Prostatic disorders were identified in 0 males and 0 females. Malignancies were not reported in either gender. Dementia cases included 2 males (0%) and 3 females (0%). Depression affected 0 males and 1 female (0%). Blindness was noted in 0 males and 0 females. Poor vision was present in 7 males (0%) and 4 females (0%). Partial deafness was reported in 4 males (0%) and 0 females. Deafness affected 1 male (0%) and 0 females.

In the South Ash Sharqiyah governorate, 1,076 elderly were screened. Among them, diabetes was found in 252 males (23%) and 354 females (33%). Hypertension affected 270 males (25%) and 405 females (38%). Dyslipidemia care was provided to 92 males (9%) and 113 females (11%). Thyroid disorders services were accessed by 25 males (2%) and 44 females (4%). Prostatic disorders were identified in 14 males (1%). Malignancies were found in 5 males (0%) and 5 females (0%). Dementia cases included 9 males (1%) and 17 females (2%). Depression affected 17 males (2%) and 17 females (2%). Blindness was noted in 6 males (1%) and 14 females (1%). Poor vision was present in 8 males (1%) and 11 females (1%). Partial deafness was reported in 67 males (6%) and 67 females (6%), while deafness affected 16 males (1%) and 19 females (2%).

Overall, across all governorates and conditions screened, the total number of elderly individuals screened was 17,243. Diabetes was diagnosed in 1,198 males (7%) and 1,467 females (8%). Hypertension affected 1,281 males (7%) and 1,608 females (9%). Dyslipidemia care was provided to 607 males (4%) and 707 females (4%). Thyroid disorders services were accessed by 94 males (1%) and 158 females (1%). Prostatic disorders were identified in 69 males (0%) and 11 females (0%). Malignancies were found in 23 males (0%) and 13 females (0%). Dementia cases included 59 males (0%) and 60 females (0%). Depression affected 20 males (0%) and 58 females (1%). Blindness was noted in 29 males (0%) and 27 females (0%). Poor vision was present in 162 males (1%) and 194 females (1%). Partial deafness was reported in 83 males (1%) and 68 females (0%), while deafness affected 11 males (0%) and 8 females (0%). Figure 9 highlights the number of elderly patients diagnosed with health conditions during follow-up visits by governorate and gender.

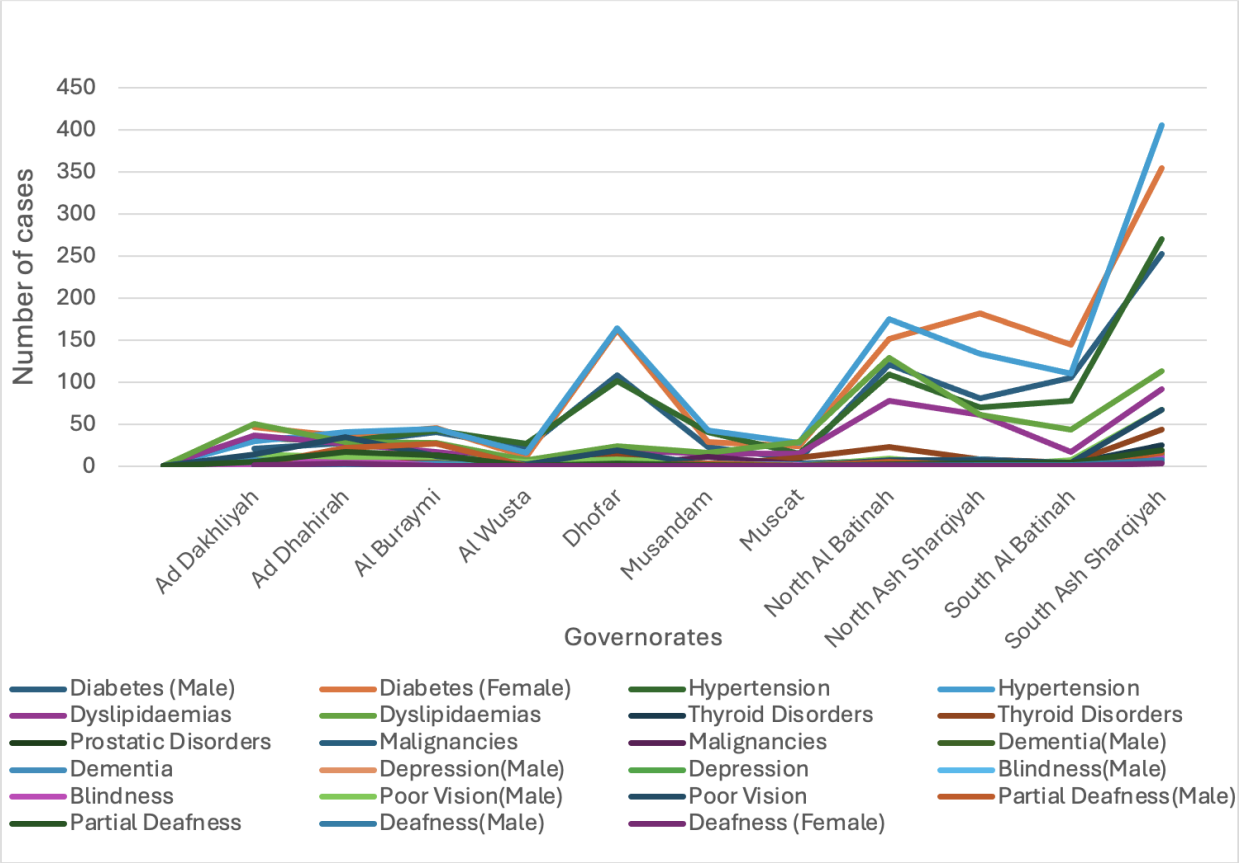

Figure 9. Number of Elderly Patients Diagnosed with Health Conditions During Follow-up Visits by Governorate and Gender.

Elderly Screening Function Status Outcome

In Al Dakhliyah, a total of 1,566 elderly were screened. Among them, 748 males (48%) and 1,104 females (70%) were independent/active. There were 49 males (3%) and 113 females (7%) who were semi-independent. Semi-dependent individuals included 16 males (1%) and 27 females (2%). Dependent/retired individuals included 41 males (3%) and 11 females (1%). The total conditions in this governorate amounted to 2,109.

In Al Dhahirah, out of 2,970 screened, 992 males (33%) and 1,154 females (39%) were independent/active. There were 176 males (6%) and 263 females (9%) who were semi-independent. Semi-dependent individuals included 73 males (2%) and 83 females (3%). Dependent/retired individuals included 22 males (1%) and 30 females (1%). The total conditions in this governorate amounted to 2,793.

In Al Buraymi, 887 elderly were screened. Among them, 433 males (49%) and 470 females (53%) were independent/active. There were 37 males (4%) and 54 females (6%) who were semi-independent. Semi-dependent individuals included 24 males (3%) and 29 females (3%). Dependent/retired individuals included 6 males (1%) and 8 females (1%). The total conditions in this governorate amounted to 1,061.

In Al Wusta, 139 elderly were screened. Among them, 57 males (41%) and 68 females (49%) were independent/active. There were 6 males (4%) and 11 females (8%) who were semi-independent. Semi-dependent individuals included 2 males

(4%) and 8 females (6%). Dependent/retired individuals included 2 males (4%) and 2 females (4%). The total conditions in this governorate amounted to 1,930.

In Dhofar, out of 1,870 screened, 918 males (49%) and 829 females (44%) were independent/active. There were 156 males (8%) and 201 females (11%) who were semi-independent. Semi-dependent individuals included 28 males (1%) and 68 females (4%). Dependent/retired individuals included 10 males (1%) and 67 females (4%). The total conditions in this governorate amounted to 2,277.

In Musandam, 126 elderly were screened. Among them, 39 males (31%) and 24 females (19%) were independent/active. There were 17 males (13%) and 17 females (13%) who were semi-independent. Semi-dependent individuals included 5 males (4%) and 5 females (4%). Dependent/retired individuals included 2 males (2%) and 2 females (2%). The total conditions in this governorate amounted to 111.

In Muscat, 1,016 elderly were screened. Among them, 434 males (43%) and 339 females (33%) were independent/active. There were 51 males (5%) and 28 females (3%) who were semi-independent. Semi-dependent individuals included 12 males (1%) and 9 females (1%). Dependent/retired individuals included 15 males (1%) and 3 females (0%). The total conditions in this governorate amounted to 891.

In North Al Batinah, 4,531 elderly were screened. Among them, 1,373 males (30%) and 1,608 females (35%) were independent/active. There were 241 males (5%) and 381 females (8%) who were semi-independent. Semi-dependent individuals included 94 males (2%) and 135 females (3%). Dependent/retired individuals included 69 males (2%) and 102 females (2%). The total conditions in this governorate amounted to 4,003.

In North Ash Sharqiyah, 1,439 elderly were screened. Among them, 587 males (41%) and 726 females (50%) were independent/active. There were 17 males (1%) and 17 females (1%) who were semi-independent. Semi-dependent individuals included 14 males (1%) and 10 females (1%). Dependent/retired individuals included 4 males (0%) and 2 females (0%). The total conditions in this governorate amounted to 1,377.

In South Al Batinah, 1,623 elderly were screened. Among them, 508 males (31%) and 705 females (43%) were independent/active. There were 55 males (3%) and 92 females (6%) who were semi-independent. Semi-dependent individuals included 26 males (2%) and 35 females (2%). Dependent/retired individuals included 14 males (1%) and 28 females (2%). The total conditions in this governorate amounted to 1,463.

In South Ash Sharqiyah, 1,076 elderly were screened. Among them, 1,752 males (163%) and 1,739 females (162%) were independent/active. There were 328 males (30%) and 413 females (38%) who were semi-independent. Semi-dependent individuals included 131 males (12%) and 159 females (15%). Dependent/retired individuals included 76 males (7%) and 203 females (19%). The total conditions in this governorate amounted to 4,801.

Overall, across all governorates, 17,243 elderly were screened. Among them, 8,690 males (50%) and 9,516 females (55%) were independent/active. There were 1,151 males (7%) and 1,618 females (9%) who were semi-independent. Semi-dependent individuals included 428 males (2%) and 646 females (4%). Dependent/retired individuals included 273

males (2%) and 494 females (3%). Figure 10 illustrates the elderly functional status by governorate.

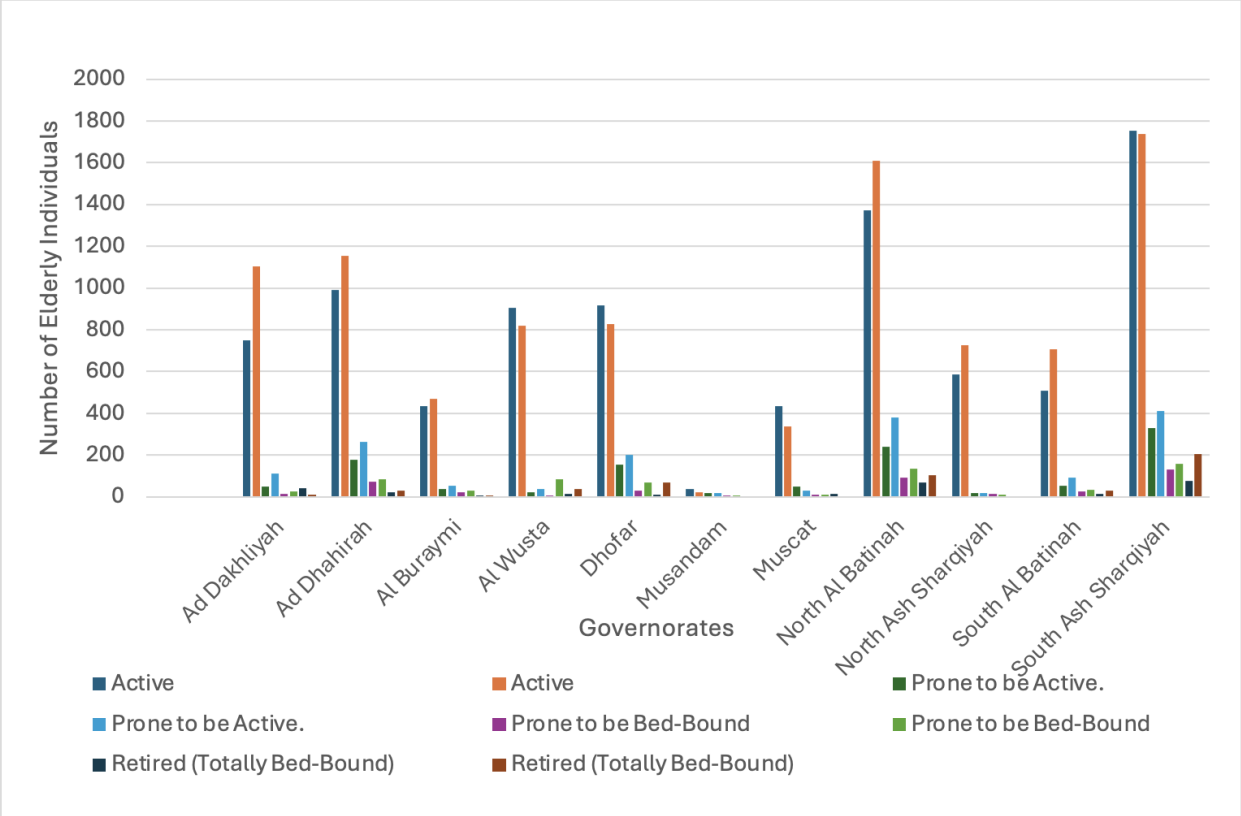

Figure 10. Elderly Functional Status by Governorate

Elderly Health Screening and Register Outcomes Across Governorates

In Al Dakhliyah 1,566 elderly were screened. 83 male (5%) and 125 female (8%) deaths. 610 male (39%) and 931 female (59%) new registrations. 424 male (27%) and 681 female (43%) removed. 6,540 males and 8,807 females registered at year-end. Total Registered: 9,955 male and 12,430 female.

In Al Dhahirah 2,970 elderly were screened. 62 male (2%) and 69 female (2%) deaths. 1,188 male (40%) and 1,507 female (51%) new registrations. 173 male (6%) and 246 female (8%) removed. 774 males and 1,039 females registered at year-end. Total registered: 2,897 male and 1,666 female.

In Al Buraymi 887 elderly were screened. 9 male (1%) and 15 female (2%) deaths. 439 male (50%) and 426 female (48%) new registrations. 23 male (3%) and 29 female (3%) removed. 2,576 males and 2,598 females registered at year-end. Total registered: 2,647 male and 2,659 female.

In Al Wusta 139 elderly screened. 7 males (5%) and 6 females (4%) deaths. 63 males (45%) and 53 females (38%) new registrations. 18 males (13%) and 8 females (6%) removed. 384 males and 298 females registered at year-end. Total registered: 587 males and 407 females.

In Dhofar 1,870 elderly screened. 44 male (2%) and 20 female (1%) deaths. 883 male (47%) and 881 female (47%) new

registrations. 141 male (8%) and 194 female (10%) removed. 2,687 males and 2,915 females registered at year-end. Total Registered: 3,546 male and 3,494 female.

In Musandam 126 elderly screened. 6 male (5%) and 4 female (3%) deaths. 285 male (226%) and 79 female (63%) new registrations. 3 male (2%) and 3 female (2%) removed. 546 males and 1,022 females registered at year-end. Total Registered: 1,835 male and 1,290 female.

In Muscat 1,016 elderly were screened. 16 males (2%) and 6 females (1%) deaths. 505 males (50%) and 437 females (43%) new registrations. 25 males (2%) and 8 females (1%) removed. 2,175 males and 1,139 females registered at year-end. Total registered: 2,930 male and 2,405 female.

In North Al Batinah 4,531 elderly screened. 79 males (2%) and 61 females (1%) deaths. 1,719 males (38%) and 2,175 females (48%) new registrations. 127 males (3%) and 123 females (3%) removed. 7,277 males and 6,526 females registered at year-end. Total registered: 15,554 males and 16,367 females.

In North Ash Sharqiyah 1,439 elderly screened. 89 males (6%) and 73 females (5%) deaths. 674 males (47%) and 811 females (56%) new registrations. 113 males (8%) and 108 females (8%) removed. 4,177 males and 5,429 females registered at year-end. Total registered: 4,755 males and 5,969 females.

In South Al Batinah 1,623 elderly were screened. 57 males (4%) and 68 females (4%) deaths. 516 males (32%) and 750 females (46%) new registrations. 58 males (4%) and 86 females (5%) removed. 3,888 males and 4,468 females registered at year-end. Total registered: 7,817 males and 8,908 females.

In South Ash Sharqiyah 1,076 elderly screened. 94 males (9%) and 87 females (8%) deaths. 367 males (34%) and 514 females (48%) new registrations. 129 males (12%) and 100 females (9%) removed. 4,892 males and 4,553 females registered at year-end. Total registered: 5,927 male and 5,689 female.

Overall, 17,243 elderly screened. 553 males (3%) and 534 females (3%) deaths. 9,029 males (52%) and 9,765 females (57%) new registrations. 1,234 males (7%) and 1,586 females (9%) removed. 35,939 males and 38,832 females registered at year-end. Total registered: 58,450 males and 61,284 females. Table 2 exhibits elderly health screening and register outcomes across the governorates in Oman.

Table 2. Elderly Health Screening and Register Outcomes Across Governorates

Governorate	Patients on Register Died During 2023 (Male)	Patients on Register Died During 2023 (Female)	A. Total Number Registered During 2023 (Male)	A. Total Number Registered During 2023 (Female)	B. Total Number Removed from The Register During 2023 (Male)	B. Total Number Removed from The Register During 2023 (Female)	Total Number of Cases on register at the end of 2023 (Male)	Total Number of Cases on register at the end of 2023 (Female)	Total Number of Cases on register at The End 2023 (Male)	Total Number of Cases on register at The End of 2023 (Female)
Al Dakhliyah	83 (5%)	125 (8%)	610 (39%)	931 (59%)	424 (27%)	681 (43%)	6540	8,807	9955	12,430
Al Dhahirah	62 (2%)	69 (2%)	1,188 (40%)	1,507 (51%)	173 (6%)	246 (8%)	774	1,039	2,897	1,666
Al Buraymi	9 (1%)	15 (2%)	439 (50%)	426 (48%)	23 (3%)	29 (3%)	2,576	2,598	2,647	2,659
Al Wusta	14 (10%)	6 (4%)	63 (45%)	53 (38%)	18 (13%)	8 (6%)	384	298	587	407
Dhofar	44 (2%)	20 (1%)	883 (47%)	881 (47%)	141 (8%)	194 (10%)	2,687	2,915	3,546	3,494
Musandam	6 (5%)	4 (3%)	285 (226%)	79 (63%)	3 (2%)	3 (2%)	546	1,022	1,835	1,290
Muscat	16 (2%)	6 (1%)	505 (50%)	437 (43%)	25 (2%)	8 (1%)	2,175	1,139	2,930	2,405
North Al Batinah	79 (2%)	61 (1%)	1,719 (38%)	2,175 (48%)	127 (3%)	123 (3%)	7,277	6,526	15,554	16,367
North Ash Sharqiyah	89 (6%)	73 (5%)	674 (47%)	811 (56%)	113 (8%)	108 (8%)	4,177	5,429	4,755	5,969
South Al Batinah	57 (4%)	68 (4%)	516 (32%)	750 (46%)	58 (4%)	86 (5%)	3,888	4,468	7,817	8,908
South Ash Sharqiyah	94 (9%)	87 (8%)	367 (34%)	514 (48%)	129 (12%)	100 (9%)	4,892	4,553	5,927	5,689
Total	553 (3%)	534 (3%)	9,029 (52%)	9,765 (57%)	1,234 (7%)	1,586 (9%)	35939	38,832	58450	61,284
(Newly Registered + Transferred in) **(Died + Transferred out)** **(Total patients registered till the end of 2022+ A -B)** **(since start the service including the dead and transfer out cases)**										

Discussion

This comprehensive evaluation of Oman's National Elderly Care Program (ECP) in 2023 revealed a multifaceted landscape of program implementation, healthcare utilization, health conditions, and functional status among elderly

individuals across different governorates. The findings demonstrate both successes and challenges in meeting the healthcare needs of Oman's aging population. Key study findings include significant regional variations in program coverage, diverse referral patterns for specialized services, varying prevalence of health conditions, a range of functional statuses, and differing register dynamics across governorates.

Program Implementation and Coverage

The study identified significant regional disparities in ECP implementation and coverage. While Al Dhahirah governorate had the highest rate, with 2,970 out of 3,439 (86%) of its target population achieved, Al Wusta and Muscat achieved only 9%. North Al Batinah emerged as a major healthcare access point, with the highest number of initial visits (4,531) and referrals (4,213). This suggests that geographical accessibility, community awareness, and healthcare infrastructure play crucial roles in elderly engagement with the ECP. Targeted outreach and educational initiatives are essential to improve program awareness and utilization in underserved regions.

Referral Patterns and Healthcare Utilization

All governorates identified health institutions as the primary referral source for elderly care, accounting for 81% of referrals for females and 86% for males, highlighting their critical role in facilitating access to healthcare services. However, variations in self-referrals (13% for females, 9% for males) and community referrals (6% for both) highlight potential barriers to care, including limited awareness and transportation challenges. Strengthening community engagement and education could empower the elderly to seek care proactively.

Prevalence of Health Conditions

The study revealed a range of health conditions prevalent among elderly individuals, emphasizing the need for tailored healthcare interventions. Variations in prevalence rates across the governorates underscore the importance of region-specific approaches to address the unique health challenges faced by the elderly in different areas. For instance, during initial visits, diabetes prevalence ranged from 2% in Al Buraymi to 16% in Al Wusta, while hypertension ranged from 1% to 19% across governorates. Proactive screening and early intervention programs are crucial to managing chronic conditions effectively.

Functional Status

Despite the classification of most elderly individuals as independent, a significant proportion experienced functional limitations. The variations in functional status across regions highlight the need for comprehensive support services, including home-based care, assistive devices, and caregiver support. Investing in these resources can promote independent living and improve the quality of life for elderly individuals with functional limitations. Notably, Al Wusta showed the highest percentage of semi-dependent and dependent individuals.

Elderly Health Screening and Register Dynamics

South Ash Sharqiyah reported a higher mortality rate among registered males (10%). Continuous monitoring and evaluation of register data are essential to identify emerging trends and inform targeted interventions to improve care delivery and reduce disparities.

Limitations

This study provides valuable insights into the ECP, yet it is not without limitations. The retrospective design, relying on existing electronic health records and manual data entry, may introduce biases and inaccuracies. Additionally, the focus on enrolled citizens limits generalizability to the broader elderly population. The absence of qualitative data restricts a deeper understanding of individual experiences and challenges within the program.

Conclusion

The evaluation of Oman's National Elderly Care Program (ECP) in 2023 reveals a complex picture of successes and challenges. While the program demonstrates strengths in certain regions, such as North Al Batinah's high service utilization and Al Dhahirah's effective outreach, disparities in program coverage, diverse health needs, and varying functional statuses among the elderly across governorates necessitate targeted interventions. The reliance on health institutions as primary referral sources underscores the need for robust healthcare infrastructure and community engagement to ensure equitable access to care. Addressing these challenges through targeted outreach, enhanced referral mechanisms, regional capacity building, personalized care plans, and continuous monitoring can optimize the ECP's effectiveness, promoting healthy aging and enhancing the quality of life for Oman's elderly population. Future research should focus on longitudinal studies, qualitative insights, and comparative analyses to further refine the ECP and ensure comprehensive elderly care.

Statements and Declarations

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Authorship contribution statement

Author Contributions: I.A., M.A., N.B. and J.A. contributed to the study concept and design. I.A. collected and assembled the data. I.A., N.B., and J, A. performed the statistical analysis. I.A., M.A., and S.A. drafted the manuscript. S.A., I.A. M.A. and S.L. critically revised the manuscript for important intellectual content. All authors have read and agreed to the published version of the manuscript.

Data availability

The data used for this study is available and will be shared by the corresponding author upon request.

Conflict of interest

None declared by the authors.

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