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How Do Saudi Older Adults Perceive Their Functionality?

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Abstract— Background: The advances in medicine and increased life span, the global population is shifting toward a more advanced age. It is expected that the global population aged more than 60 years will reach 1.4 billion by the year 2030.Therefore, in this study, the functional health among Saudicommunity-dwellingolder adults in Makkah province was assessed. **Methodology:** This cross-sectional study was conducted from July 2019 to June 2020 in Makkah province, Kingdom of Saudi Arabia. A total of 328 participants completed our survey. Qualitative variables were described in frequencies and percentages, while quantitative data were expressed in means ± standard deviations. In addition, P-values were calculated using the Pearson chi-square test to define the significance of the results. **Result:** Activity of daily living (ADL) score was significantly associated with older age, being divorced/separated/widowed, and the presence of more than three comorbidities (P <0.001). Living alone, gender, and having someone to talk to have no significant association with the ADL score. Participants with a low ADL score were more likely to have never left home in the last month, had a fall in the last year, and have an inadequate income (P <0.001). In addition, participants who were satisfiedand happy with their life had a better average ADL score (P<0.001). **Conclusion:** In conclusion, age, marital status, number of comorbidities, lack of satisfaction in life, falls, and income had an important effect on the prevalence of functional disability. Most of these factors are modifiable; therefore, practitioners should be aware of these factors to be able to develop patient-specific intervention.

Keywords: Older Adults, Functionality, Activity of daily living

Introduction:

Because of the advances in medicine and increased life span, the global population is shifting toward a more advanced age. It is expected that the global population aged more than 60 years will reach 1.4 billion by the year 2030. According to the General Authority for Statistics of Saudi Arabia, the population of Saudi older adults was reported to be 836,707, 937,902,and 1,359,251 in 2004,2010, and 2018 respectively(1–3). Thus, between 2004 and 2018, older adults in Saudi Arabia increased by a factor of 1.62.

With the increase in age, the older adult population is more prone to have multiple comorbidities and limitations in their daily activities(4, 5). Disability increases with age and is defined by limitations in necessary activities that are needed for independent life(6–8). Several instruments can be used to measure the level of functionality and disability including, but not limited to,the activities of daily living (ADL) and instrumental activities of daily living (IADL). ADL measure simple life activitiesrelated to self-care,such asbathing and eating; IADL, on the other hand, measureother more complex activities, such as taking medications andmaking meals(9).Disability measured by ADL and IADL differs in individual countries(10). This could be explained by the differences related to social status, education, culture, and view toward aging found in other countries (7, 8). Other factors that affect ADL arephysical and

psychological well-being, which are interrelated throughout life.The way people perceive their health also impacts their physical, functional, and psychological well-being (11, 12).Culture is another important factor.In general, Saudiolder adults tend to live with their family and rarely live in nursing homes as it is socially condemnable (13). Because very limited studies were conducted in community-dwelling Saudi population concerning functionality and related health and the differences in culture and other aspects, this study aims to study the disability level in Saudi community-dwelling older adults and compare it to other studies around the world.

Methodology:

Study design, setting, period, and aim: This observational, cross-sectional study conducted from July 2019 to June 2020 in Makkah province, Kingdom of Saudi Arabia,aims atknowing the functional health among Saudi older adults in this region.

Ethical approval: This study was approved by the biomedical ethical committee of King AbdulAziz University Hospital. All participants were notified about the study objectives and response confidentiality, and their consents were taken.

Population: The sample size required for this study was calculated as 328 participants for 95% confidence level with a margin of error of 5%. The calculations were made using the Raosoftsample size calculator. The inclusion criteria were as follows: Saudi nationality, age older than 60 years, and living in Makkah province. A total of 500 community-dwellingolder adults answered the questionnaire, of which 172 were excluded due to them being non-Saudi.

Data collection and definition of variables (instrument): Data for this study were collected from the Canadian Study of Health and Aging-3 (CSHA-3) using Google Forms survey. The questionnaire was translated to Arabic, and we asked if the participants filled the survey by themselves or by the help of someone.

Functional disability: Functional disability was assessed using six ADL items and seven IADL items. A score of 0–2 was given for each activity, with the score 2 given if the participants were able to do the stated items independently and 0 if unable to do it at all. The items measured in ADL were walking, eating, bathing, going to the toilet, dressing, and taking care of their appearances, while the items in IADL were using phone, going out, shopping, making meals, doing housework, taking medicine, andhandling money.

Data entry and analysis: Microsoft Excel was used for data entry, and the SPSS software was used for the analysis. The main dependent variable is functional health.
Descriptive analysis was conducted for all variables.The chi-square test was used to examine the associations between comorbidities and functionality. Other association with sociodemographic data was also performed.

Results:

A total of 328 responses met our criteria. Half of the participants (164) were male. Most of them (71%) were between 60 and 69 years old, and only 8.5% were at or older than 80. Most of the samples studied were married (74.7%) and living together, and very few never married (3.7%). In addition, most of the participants were not living alone (88.7%), and 83.5% had social support (someone to talk and listen to), as described in Table1.

Table 1. Descriptive statistics for the sample studied

Variable		Number (%)	ADL difficulty	P-value	Difficulty with IADL	P-value
Age	60–69	233 (71%)	25 (10.7%)	P<0.001	131 (56.2%)	P <0.001
	70–79	67 (20.4%)	23 (34.3%)		47 (70.1%)	
	80 or above	28 (8.6%)	17 (60.7%)		26 (92.9%)	
Gender	M	164 (50%)	36 (22.7%)	P=0.406	98 (59.8%)	P =0.425
	F	164 (50%)	29 (17.7%)		106 (64.6%)	
Marital status	Single	12 (3.7%)	2 (16.7%)	P<0.05	7 (58.3%)	P <0.05
	Married	245 (74.7%)	38 (15.5%)		141 (57.6%)	
	Divorced or widowed	71 (21.6%)	25 (35.2%)		56 (78.9%)	
Living alone	Yes	37 (11.3%)	5 (13.5%)	P =0.39	22 (59.5%)	P =0.722
	No	291 (88.7%)	60 (20.6%)		182 (62.5%)	
Havingsomeone to talk to[α]	Yes	274 (86.4%)	53 (19.3%)	P =0.86	173 (63.1%)	P =0.38
	No	43 (13.6%)	10 (23.3%)		23 (53.5%)	
[α]Ofthe participants, 11did not answer the question (N=317).						

ADL, activities of daily living
IADL, instrumental activities of daily living

The functional health represented by ADL score of 13 questions had an average of 22.7 (out of 26) and standard deviations of 5.4. The participant's mobility was measured by their ability to move up the stairs and whether they use a walker or a wheelchair. Most of the participants can move up the stairs without help (80.2%), while 26.2% uses walkers to move around, and only 15.5% uses wheelchairs. In the last month, 57.9% went outside of their homes more than twice a week, 19.8% went one day or less in a week, and 22.3% never went outside.

The ADL score was significantly associated with older age, being divorced/separated/widowed, andthe presence of more than three comorbidities (P <0.001). Living alone, gender, and having someone to talk to have no significant association with the ADL score. Participantswith a low ADL score were more likely to have never left home in the last month, had a fall in the last year, and had an inadequate income (P <0.001). In addition, participants who were satisfied and happy with their life had a better average ADL score (P<0.001).

Table2. ADL and IADL disability

Variable		Number of disability (%)
ADL disability	Eating	19 (5.8%)
	Dressing	28 (8.6%)
	Caring for oneself	41 (12.5%)
	Walking	49 (15%)
	Going to the bathroom	27 (8.3%)
	Taking a shower	31 (9.5%)
IADL disability	Using a telephone or mobile phone	32 (9.7%)
	Going to places out of walking distance	62 (18.9%)
	Shopping	78 (23.8%)

	Preparing meals	135 (41%)
	Taking medicine	45 (13.8%)
	Budgeting money	74 (22.6%)
	Doing housework	171 (52.1%)

Discussion:

To our knowledge, this is the first study that assessesthe functionality of Saudi community-dwellingolder adults in Saudi Arabia. Based on our results, ADL and IADL disabilities were reported to be 19.8% and 62.2%, respectively. The most commonly reported ADL andIADL disabilitieswereconcerningwith walking (14.9%) and doing housework (52.1%), respectively. The results from the Canadian Study of Health and Aging, and the study in Poland were similar in ADL, which were15.4%, and 17.13%, respectively(14–16).Ahigher ADL disability was reported in healthand retirement (HRE) in a study in Panama, which were 36.2% and 53.3%,respectively. The most commonly reported ADL disability was reported to be related to walking (14.9%).However, overall IADL disability reported in CSHA, HRE, and the study in Poland were 33.4% and 35.75% (15–18).

The differences in the prevalence of ADL and IADL between studies are related to many factors, such as different instruments used and culture- and population-related factors, such as the level of education, family support, and low number of older adults present in institutions for older adult care.

Our study assessed the relationship of many factors with functional disability, such as age, marital status, living alone, the presence of comorbidities, and others.

As age is known to be associated with function disability, our study found that 57.9% and 76.8% of older adults over 70 years old had an ADL or IADL disability, respectively,with older adultsover 70 years old being six time more likely to have an ADL disability compared with older adults who are 60–69 years old. Similar results were reported by Connoly et al., who found a 2.5-fold increase in experiencing ADL among older adults who are 75–79 years old compared with those 65–69years old (19);however, there was a difference in the magnitude of effect in this study,which could be related to the different age group used to define older adults, different tool used for the assessment of ADL, and other population-related factors, such as cultural differences, as older adults in Saudi Arabia usually stay in their homes and are taken care of by their families compared to the western countries, which use long-term care facilities to care for the older adults.

Having at least oneADL disability was significantly associated with marital status as the single groupismore likely to have a lower ADL; thiswas corroborated in other studies(20, 21).
People with ADL disability were more likely to experience falls and less likely to leave home, being happy, and dissatisfied with their life(10, 22).

Limitation

This study was limited bythe use of online survey, not interview, because of the coronavirusdisease 2019pandemic lockdown.

Conclusion

In conclusion, age, marital status, the number of comorbidities, lack of satisfaction in life, falls, and income had an important effect on the prevalence of functional disability. Most of these factors are modifiable; therefore, practitioners should be aware of these factors to be able to develop patient-specific

intervention. Our study revealed significantdisability in ADLs and IADLs in older adults living in Makkah province in Saudi Arabia.

We recommend doing further studies in Saudi provinces and to do it at a nationallevel. We also recommend doing a cohort studies with regular interview follow-ups to reduce recall bias.

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