



## An Overview of Applying Health Promotion Measures in Some of Elderly Homes in Cairo Egypt

### KEYWORDS

Health promotion, elderly homes, Egypt.

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**ABSTRACT** *BACKGROUND & OBJECTIVES: Elderly home residents are one of the most vulnerable population to chronic illnesses and multiple co-morbidities; this vulnerability makes application of health promotion measures to them crucial, yet little is known about health promotion measures in these homes in Cairo, Egypt. The purpose of the study was to determine the prevalence of applying health promotion measures among elderly home residents in Cairo, Egypt. SUBJECTS & METHODS: Cross sectional study recruited 350 elderly residents. The collected data included queries regarding healthy life style counseling, immunization, cancer and medical diseases screening. Geriatric health issues screening (cognitive impairment, depression, urinary incontinence, and falls). RESULTS: The most prevalent health promotion measure applied among elderly home residents in Cairo is: chemoprophylaxis. The least applied is cancer screening. DISCUSSION: The lack of health promotion measures in elderly homes reflects a major gap in health services for older adults. One of the major causes is the inadequate number of skilled staff members to meet the needs of the residents whose families could not manage.*

### Introduction

Elderly population is growing fast. The number of Egyptian population aged 60 years and older was 6 % in 2006 and is expected to be 9% by 2015 then 12% by 2030.<sup>1</sup> A major number of deaths and disabilities among elderly are a result of progressing chronic diseases for which human behaviors are major contributing factors. To adopt a strategy that promotes health and controls costs an aggressive agenda of health promotion and disease prevention emerges<sup>2</sup>, to maintain health status of elderly and assist their good quality of life without dependence the World Health Organization (WHO)<sup>3</sup> emphasizes health promoting behaviors. Health promotion is thought to keep elderly independent and prevents health decline and institutionalization. It is rarely too late to change behaviors that endanger elderly health; i.e the risk of premature death is reduced by 50% if smoking cessation occurred at the age of 50 years while quitting at 60 years of age is associated with prolonged lives of the quitter compared to those who continue smoking.<sup>4</sup> Data disclosed that nursing home environment is not a health promoting one rather than being linked to illnesses and functional dependency.<sup>5</sup> In Egypt, caring of older relatives by the family is the norm, yet extended hospitalizations and the institutionalization of frail ones have occurred in greater-Cairo since the 1980s<sup>6</sup>. There is an existing gap in care because policy makers assume that families will care for their elderly ones, despite increasing rates of migration, urbanization, and women's participation in the workforce.<sup>7,8</sup> In Egypt the number of institutions caring for the elderly is 121 in 2011 providing care for 6419 elderly nationwide.<sup>9</sup> There are no available data regarding the exact health promotion measures provided for elderly home residents in Egypt which is a crucial issue in maintaining elderly health in these homes. Hence the aim of this study was to obtain an overview of

the health promotion measures in elderly homes in Cairo, Egypt.

### Methods:

A cross sectional study was conducted in 12 elderly homes in Cairo, Egypt to determine prevalence of health promotion measures application among the residents. Three hundred and fifty elderly 60 years and older both males (136) (38.9%) and females (214) (61.1%) were recruited. Elderly homes were divided into governmental ones (10 homes inhabitant by 320 (91.4%) residents), and non-governmental ones (2 homes inhabitant by 30 (8.6%) residents). What distinguishes the non-governmental homes is the presence of a geriatrician within the staff to offer medical care for the residents, un-like the governmental homes which have non-specialized physician, or no physician within the staff and medical consultations are offered only when there is a need for them. The 12 homes were scheduled for visits according to the arrangement with their managers. All residents in the 12 homes were eligible to participate in the study except those who are under age or refused to participate in the study. Each participant was consented orally and was subjected to; comprehensive geriatric assessment including assessment of cognition (Mini-Mental Status Examination (MMSE)), function (Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL)), depression (Geriatric Depression Scale-15 (GDS-15)), falls risk (The Timed Up & Go (TUG) Test), nutritional status (Mini-Nutritional Assessment (MNA)), and urinary incontinence. Regarding health promotion measures we assessed immunization history guided by the Center for Disease Control and prevention (CDC)<sup>10</sup> recommendations (influenza vaccine annually, pneumococcal vaccine once at 65 years old, and tetanus vaccine every 10 years). Cancer screening history was guided by the U.S. Preventive Services Task Force

(USPSTF) recommendations as follows:

- Screening for breast cancer by mammography every 2 years for females aged 50 to 74.<sup>11</sup>
- Cervical cancer by Pap smear every 3 years (can be stopped after age 65 for women who have had adequate prior screening).<sup>12</sup>
- Colorectal cancer in both males and females using fecal occult blood testing (FOBT) annually, sigmoidoscopy every 5 years or colonoscopy every 10 years for adults beginning at age 50 and continuing until age 75.<sup>13</sup>

Healthy life style counseling assessment included queries about smoking cessation counseling for smokers, regular exercise counseling, alcohol cessation counseling for alcoholics (if any), chemoprophylaxis in the form of daily aspirin intake, and daily supplementation of calcium, vitamin D, and/or multivitamins.

Medical comorbidities screening assessment included queries about blood pressure measurement yearly<sup>14</sup>, diabetes mellitus screening every 3 years<sup>15</sup>, lipid disorder screening every 5 years<sup>16</sup>, screening for abdominal aortic aneurysm (AAA) once between 65-75 in men who have ever smoked<sup>17</sup>, osteoporosis screening (yearly for females at the age of 65 and older, and in younger women whose fracture risk is equal to or greater than that of a 65-year old white women who has no additional risk factors)<sup>18</sup>, and finally men were asked for osteoporosis screening according to Qassem et al.<sup>19</sup> (age >70 years, low body weight [body mass index <20 kg/m<sup>2</sup>], physical inactivity, corticosteroid use and previous fragility fracture).

Screening for common geriatric health issues assessment included queries about yearly screening for depression, visual impairment, hearing impairment, thyroid gland disease in women, cognitive impairment, skin problems, glaucoma, and falls.<sup>20</sup>

Approval of the geriatric department council was obtained for performing the research and approval of elderly homes directors was obtained before meeting residents. Each resident was consented orally before the interview.

#### Statistical Methods:

Analysis of data was done using SPSS 12 (statistical program for social science version 12). Description of quantitative variables was done as mean, SD and range. Description of qualitative variables was done as numbers and percentages. Chi-square test was used to compare qualitative variables between groups. The level of significance was taken at P value; P value  $\geq$  0.05 is insignificant, P<0.05 is significant, and P<0.01 is highly significant.

#### Results

The demographic characteristics of the studied population are shown in table (Table1). Geriatric health issues were most commonly screened among the 30 residents (8.6%) inhabiting non-governmental homes having a geriatrician for medical care. These geriatrics health problems are malnutrition, depression, hearing impairment, urinary incontinence, and falls with a prevalence of screening in relation to the total population as follows 8.6% (N=30), 8.6% (N=30), 8.6% (N=30), 6.6% (N=23), and 1.4% (N=5) respectively. The screening of visual impairment was 0% in the 12 geriatric homes (Table 2). Regarding application of health promotion measures, the most common one was daily multivitamins intake (54.6%) (N=191) followed by

daily aspirin intake (47.4%) (N=166). Calcium and vitamin D intake showed a prevalence of (19.4%) (N=68). Among medical diseases, screening for hyperlipidemia (16.6%) (N=58), hypertension (15.4%) (N=54), and diabetes mellitus (11.4%) (N=40) were the commonest. Counseling was only done for smoking cessation (6.3%) (N=22) and exercises (2.3%) (N=8), while vaccination was only applied for influenza vaccination (3.1%) (N=11). Osteoporosis which is one of the most important preventable and treatable diseases was screened only in (1.7%) (N=6). Finally cancer screening was observed only for breast cancer (1.8%) (N=4). No residents were vaccinated for pneumococcal disease or tetanus. No residents were screened for colorectal cancer, cervical cancer (females), or abdominal aortic aneurysm (males) (Table 3). The presence of a geriatrician offering the medical care for residents was significantly related to higher percentage of geriatric health problems screening as malnutrition, falls, depression, urinary incontinence, and hearing impairment ( $p < 0.001$ ) (Table 4). Finally we calculated the percentage of diseased residents in each disease category who were diagnosed by previous screening in relation to the total number of diseased ones in each category diagnosed by our recent screening. It was found that depression is the highest disease diagnosed by previous screening (22.6%) (N=19), followed by cognitive impairment (18.9%) (N=10), malnutrition (11.5%) (N=23), urinary incontinence (8.6%) (N=6), fall risk (5.1%) (N=5), diabetes mellitus (1.4%) (N=2), and hypertension (1.2%) (N=2) (Table 5).

#### Discussion

In Egypt, families are the main source of applying assistance and support in living for a large number of elderly people. There is limited number of elderly institutions located largely in urban areas, where the level of care, the quality of services provided and the cost can vary markedly across these facilities. Private elderly homes in Egypt usually serve those who can afford their costs. Elderly with poor economic status are usually served by the governmental homes or those belonging to charities. While studies show that dementia is the most common cause for nursing home placement in developed countries<sup>21</sup>, the feeling of being a burden, lack of family care, family problems, and feeling lonely were the main reasons to stay in a geriatric home in Egypt.<sup>22</sup> This was evident by the high percentage of widows and widowers (62.3%) and the non-small percentage of divorced and single people (26.8%). The different characteristics of admission to elderly homes in Egypt compared to those applied in nursing homes or assisted living facilities in developed countries make the demographic characteristics of our residents as regards common geriatric problems much different. Among our residents, the prevalence of cognitive impairment was (14.9%), ADL impairment was (31.9%), and IADL impairment was (32.2%). In developed countries, the prevalence of cognitive impairment in nursing homes is (89%<sup>23</sup>, 64.8%<sup>24</sup>) while in assisted living facilities is (68%<sup>25</sup>, 45%-63%<sup>26</sup>). ADL impairment is 78.4%<sup>24</sup> in nursing homes while in assisted living facilities, about three-quarters residents have assistance with bathing (72%), 52% have assistance with dressing, 36% have assistance with toileting, 25% have assistance with transferring, and more than one-fifth have assistance with eating (22%).<sup>27</sup>

As a high percentage of Egyptian elderly home residents have intact cognitive and functional screening, they are more likely to benefit from health promotion measures if applied properly. The current study surveyed the commonly recommended health promotion measures and its application in some Egyptian elderly homes. It was observed that elderly homes, where medical care is managed

by a geriatrician, have a higher percentage of screening for common geriatric problems (depression, cognitive impairment, malnutrition, hearing impairment (100%), urinary incontinence (76.7%), and lastly falls (16.7%)). In contrast, elderly homes which offer a none-specialized medical care showed zero percent screening for all previously mentioned geriatric problems. When we performed our screening over the study population during the study, the prevalence of these geriatric problems was far more than that detected previously. This finding may indicate the non scheduled nature of applying screening to detect new cases. Regarding cancer screening, the only screened cancer was breast cancer (1.8%). Bradley et al<sup>28</sup>, reported that nearly 9% of nursing home residents have a cancer diagnosis. Late and un-staged cancer is much more prevalent than in other elderly patients. The majority of facilities have no guidelines regarding cancer screening.<sup>29</sup> This may reflect the questionable benefits and potential harms associated with screening elderly patients in such facilities. Yet the different characteristics of our population strongly favor cancer screening for them. Health education is strongly recommended to be offered to Egyptian residents regarding common cancers in elderly and its screening methods. Though cancer and common geriatric problems screening was deficient, the most serious deficiency of health promotion measures application was vaccination. Only 3.1% of our population was vaccinated for influenza and no one was vaccinated for pneumococcal disease. A systematic review of the effectiveness of influenza vaccination in institutionalized older adults to determine the outcome which is influenza-like illness, laboratory confirmed influenza, hospitalizations due to influenza-like illness, or pneumonia and death due to influenza or pneumonia revealed a significant reduction in pneumonia and death due to pneumonia or influenza.<sup>30</sup> The environmental nature of elderly

homes with the overcrowding and the prolonged contact between residents makes influenza and pneumococcal disease an easy catchable illnesses with all of their consequent complications. More research is recommended to report the actual numbers of Egyptians residents who get influenza or pneumococcal disease and their outcome to help for further establishment of a vaccination policy for them. Osteoporosis and falls were another important area for screening that was deficient in our population. Fall risk assessment was done only for 1.4% of residents while osteoporosis screening was done for 1.7%. The fact that 28% of our population are at risk of falls when assessed makes scheduled screening for falls very important and makes osteoporosis screening crucial to avoid future fractures. This is another area of health promotion that needs more health education, research, and establishment of guidelines. The remaining health promotion measures specially vitamins intake and screening for common medical problems as hypertension and diabetes mellitus got a better chance for application among our residents, yet we did not get data regarding if they are applied properly or not. In conclusion, Egyptian elderly homes have their own characteristics that make health promotion measures application warranted. The current study reveals deficiency in most of health promotion measures that should be applied to elderly. The presence of a geriatricians offering medical care for the residents puts their geriatric problems on the spot, yet not all homes have this type of medical care. Finally, a thorough research is needed on a large number of elderly homes to obtain more information that help in the establishment of guidelines or policy for application of health promotion measures in their settings.

**Conflicts of Interest Statement:** no conflicts.

**Acknowledgment:** none.

**Table (1): Demographic characteristics of the studied population:**

Age	Mean±SD	Range
	71.75±6.44	60 – 92
Gender		NO.
		%
Marital Status	Male	136
	Female	214
Marital Status	Married	38
	Single	39
	Widow/er	218
	Divorced	55
Education	Illiterate	49
	Below high school	48
	High school	38
	University or higher education	215
Smoking	Current cigarette smoker	55
	ex- cigarette smoker	85
	Non smoker	208
	Others	2
Activities of Daily Living	Independent	237
	Assisted	106
	Dependent	5
Instrumental Activities of Daily Living	Independent	236
	Assisted	69
	Dependent	43
Cognitive impairment	Yes	52
	No	294
Depression	Yes	84
	No	259
Number of co-morbidities	0	105
	One	68
	Two	74
	Three	52
	More than 3	51

Types of co-morbidities	Hypertension	165	47.1%
	Diabetes mellitus	138	39.4%
	Visual impairment	124	35.4%
	Osteoarthritis	98	28%
	Hearing impairment	83	23.7%
	Ischemic heart disease	59	16.9%
	Chronic obstructive pulmonary disease/ Bronchial asthma	54	15.4%
	Cerebrovascular stroke	33	9.4%
	Heart failure	14	4%
	Kidney disease	11	3.1%
	Parkinson's disease	10	2.9%
	Atrial fibrillation	9	2.6%
	Liver disease	7	2%
	Thyroid disease	5	1.4%

**Table (2): Prevalence of important geriatric health problems among elderly homes residents and the percentage (%) of the previous screening of each:**

		No.	%
Malnutrition	Normal	149	42.6%
	At risk	165	47.1%
	Malnourished	36	10.3%
Screening for malnutrition	Yes	30	8.6%
	No	320	91.4%
Risk of fall	No risk	223	63.7%
	At Risk	98	28%
	*Couldn't be assessed	29	8.3%
Screening for risk of fall	Yes	5	1.4%
	No	345	98.6%
Depression	Depressed	84	24%
	Not depressed	261	74.6%
	#Couldn't be assessed	5	1.4%
Screening for depression	Yes	30	8.6%
	No	320	91.4%
Cognitive impairment	Cognitively impaired	55	15.7%
	Not cognitively impaired	295	84.3%
Screening for cognitive impairment	Yes	30	8.6%
	No	320	91.4%
Urinary incontinence	Incontinent	70	20%
	Continent	280	80%
Screening for urinary incontinence	Yes	23	6.6%
	No	327	93.4%
Hearing impairment	Yes	83	23.7%
	No	267	76.3%

Screening for hearing impairment	Yes	30	8.6%
	No	320	91.4%
Visual impairment	Yes	124	35.4%
	No	226	64.6%
Screening for visual impairment	No	350	100%

\*(Could not be assessed due to being bed bound or chair bound or cognitively impaired).

#(Could not be assessed due to sever cognitive impairment)

**Table (3): Prevalence of applying health promotion measures among the studied population:**

	No.	%
Daily multivitamins intake	191	54.6%
Daily aspirin intake	166	47.4%
Daily calcium and vitamin D intake	68	19.4%
Screening for hyperlipidemia	58	16.6%
Screening for hypertension	54	15.4%
Screening for diabetes mellitus	40	11.4%
Counseling for smoking cessation	22	6.3%
Influenza vaccine	11	3.1%
Exercise counseling	8	2.3%
Screening for osteoporosis	6	1.7%
Screening for breast cancer (mammography)	4	1.8%
Pneumococcal vaccine	0	0%
Tetanus vaccine	0	0%
Screening for cervical cancer (Pap-smear)	0	0%
Screening for colorectal cancer	0	0%
Screening for abdominal aortic aneurysm among males (no. 136)	0	0%

**Table (4): Relation between presence of a Geriatrician, a non-specialized physician or no physician in geriatric homes and the percentage of screening of some geriatric health issues**

No.		Geriatrician		Non specialized Physician		Specialized consultation on demand		Chi-square test	
		%	No.	%	No.	%	X <sup>2</sup>	P-value	
Screening for Malnutrition	Yes	30	100.0%	0	0.0%	0	0.0%	350.000	<0.001
	No	0	0.0%	244	100.0%	76	100.0%		
Screening for risk of fall	Yes	5	16.7%	0	0.0%	0	0.0%	54.106	<0.001
	No	25	83.3%	244	100.0%	76	100.0%		

Screening for Depression	Yes	30	100.0%	0	0.0%	0	0.0%	350.000	<0.001
	No	0	0.0%	244	100.0%	76	100.0%		
Screening for cognitive impairment	Yes	30	100.0%	0	0.0%	0	0.0%	350.000	<0.001
	No	0	0.0%	244	100.0%	76	100.0%		
Screening for urinary incontinence	Yes	23	76.7%	0	0.0%	0	0.0%	262.589	<0.001
	No	7	23.3%	244	100.0%	76	100.0%		
Screening for hearing impairment	Yes	30	100.0%	0	0.0%	0	0.0%	350.000	<0.001
	No	0	0.0%	244	100.0%	76	100.0%		
Screening for visual impairment	Yes	0	0.0%	0	0.0%	0	0.0%	NA	<0.001
	No	30	100.0%	244	100.0%	76	100.0%		

**Table (5): The actual number and % of residents diagnosed by our screening in each disease category compared to those diagnosed by screening done before or medical consultation due to symptomatology**

Disease	Total No. of affected residents among the study group	No. & % of residents diagnosed by screening among the diseased group	No. & % of residents diagnosed by medical consultation due to symptomatology
DM	138	2 (1.4 %)	136 (98.6%)
HTN	165	2 (1.2%)	163 (98.8%)
Depression	84	19 (22.6%)	65 (77.4%)
Urinary incontinence	70	6 (8.6%)	64 (91.4%)
Cognitive impairment	53	10 (18.9%)	43 (81.1%)
Hearing impairment	83	0 (0 %)	83 (100%)
Visual impairment	124	0 (0 %)	124 (100%)
Risk of fall	98	5 (5.1%)	93 (94.9%)
Malnutrition	201	23 (11.5%)	178 (88.5%)

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