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A comprehensive assessment of the physical, nutritional, and psychological health status of the elderly populace in the Fayoum Governorate (Egypt)

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ABSTRACT

Background: Elderly in Egypt is approximately 7.2% of the population. The main physical health problems affecting old age is Non-communicable diseases (NCDs). Depression is the commonest geriatric psychiatric disorder related to various life events. Malnutrition is associated with poor health, and cognitive impairment.
Objectives: To determine the prevalence of chronic non-communicable diseases; malnutrition and depression with identification of related risk factors among Fayoum elderly population.
Methods: A cross-sectional descriptive community based survey was conducted among elderly population 2219 in Fayoum governorate. The sample was multistage stratified cluster random. An interview structured questionnaire including socio-demographic characteristics, history of chronic NCDs, evaluation of nutritional and psychological status by MNASF and GDSLF tools respectively.
Results: More than ninety percent of the studied population was suffering from more than one disease either physiological or pathological. The prevalence of malnutrition and depression was 10.9% and 74.5% respectively. Logistic regression analysis revealed that female gender, with increased age, and disease burden were common risk factor for both malnutrition and depression.
Conclusion & recommendation: Non-communicable disease, malnutrition and depression were prevalent in our older population. These findings indicated the need for comprehensive integrated medical, psychological and nutritional health care at the level of the primary health care units.

1. Introduction

Geriatrics is a term that typically refers to focussing upon and attending to the unique healthcare needs of the aged in any community. Worldwide, people over the age of 65 are deemed elderly; but in Egypt, old age is considered to begin after the age of 60 is reached (i.e. the age of retirement) (Mostafa, 2013). This group is approximately 7.2% of the Egyptian population, according to the last recorded Egyptian census of 2006 (CAPMAS, 2015), estimating a life expectancy of 69 years for males and 74 years for females (WHO, 2012). The number of elderly adults would then exceed the number of children by the year 2045, globally. With figures depicting over 700 million elderly people in 2009, the numbers are expected to rise to 2 billion by 2050, with a rapid increase in developing countries (Bamford, 2011). The Egyptian elderly population growth is therefore expected to rise by 8.9% in 2016, and 10.9% in 2026 [5].

Ageing is thus a universal natural phenomenon. It is an irreversible descent in organ function over time without injury or illness, and it affects different organs. Often it can take place physiologically, resulting in the impairment of vision and hearing abilities and in the enlargement of prostate among males and thereby a frequent occurrence in old age. On the other hand, there are some pathological changes; cardiovascular, renal, and central nervous systems are usually the most vulnerable. Non-communicable diseases (NCDs) are an intensifying public health problem, due to environmental pollution. A higher exposure to different behavioural risk factors (urbanization and unhealthy lifestyle) has resulted in a progressive rise in the burden of NCDs (Feng et al., 2014). These affect mainly low and middle income countries and are responsible for approximately 75% of annual deaths worldwide (CDC, 2011). In Egypt, NCDs are estimated to account for 85% of the total deaths, while cardiovascular diseases alone account for 46% (WHO, 2014).

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Malnutrition is also widespread amongst the elderly population. An estimated 5–10% of elderly people living in the community remain malnourished. This is a major cause for concern, due to its negative impact on their health and life style (Furman, 2006).

Depression more so is the one of the most leading and commonplace geriatric psychiatric disorders related to various life events, such as psychological, social, and physical health problems; its prevalence varies between 12.9% and 21.2% in many countries (Eman & Mohamed, 2011). Depression amongst the elderly is classified as either minor or major depression (Goyal & Kaja, 2014). According to the WHO, factors which boost the risk of depression in older people include genetic susceptibility, chronic disease and disability, pain and frustration culminating from limitation in daily activities. Personality traits (dependent, anxious or avoidant), adverse life events (separation, divorce, bereavement, poverty, and social isolation) and lack of adequate social support also have a major role to play (WHO, 2001). Numerous studies have demonstrated a link between depression and various socioeconomic variables such as advanced age, low education, poverty, and manual occupation (Murata, Kondo, Hirai, Ichida, & Ojima, 2008).

The main objective addressing the health concerns of the aged is to prevent or at least minimise the occurrence of physical and psychological disease when encountered, by reducing disability and thereby promoting the quality of life. This presents both a dire challenge and a call to action to our health care systems and professionals to better understand age-related changes whilst detecting and then addressing the most prevalent patterns in different phases of the aging process (Santoni et al., 2015).

This unique study therefore aims to explore the current prevalence of chronic non-communicable diseases, malnutrition and depression, including the risk factors associated with them with close reference to the elderly population of the Fayoum governorate in Egypt.

2. Subjects & methods

This was a cross-sectional, descriptive, community based survey conducted to assess the physical, psychological and nutritional status of the elderly in Fayoum governorate-Egypt. Egypt ranks 108th out of 187 countries in the Human Development Index (HDI, 2014). There are numerous developmental challenges confronting Egypt, considering that 26.3% of Egyptians live below the poverty line, and given that 28% of people aged 15 and older are illiterate. The significant inequalities between urban and rural areas along with poor quality of public services add to the dilemma (Human Development Report, 2015).

Fayoum is one of 29 governorates in Egypt and is considered one of the Upper North governorates. Fayoum governorate's total population is 2,511,027 according to an Egyptian census conducted in 2006. About 22.5% of the population lives in urban areas whilst the rest of the population resides in rural communities. Fayoum stands among the lowest ranking five governorates. In 2008, it reached the 20th position in Egypt's human development index and remained so for several years. Such a deteriorating situation correlates to some factors on top such as high illiteracy rates, poverty, strong traditional beliefs related to rural community such as early marriage, especially prevalent in agricultural communities (Human Development Report, 2008).

The sample was a multi-stage stratified cluster random sample to be representative for 6 districts of Fayoum governorate (Tamiya, Sinnuris, Fayoum, Etsa, Abshoay, and Youssef Sadiek) districts. The number of elderly people in Fayoum governorate was 133,802 which accounted for 5.3% of the total population. The sample drawn from each district was almost equal to the percentage of the elderly people residing in the district (CAPMAS, 2013).

The multi-stage stratified cluster random sample was done in following stages; first stage was cluster sampling for urban and rural areas in each district. Each district was divided into urban and rural regions, with the randomly selection of a village in each district to be representative of its rural population, such as Kafr Mahfouz village in Tamia, Senhorkablia village in Sinnuris, Manshet Abdallah village in Fayoum, Al-Atemna village in Etsa, Senro village in Abshoay, and Kahak village in Youssef Sadiek. Second stage cluster to identify one population's block in each village; the third stage was chosen a street in each population blocks. A Street was chosen at random in each selected village with the decision to proceed in one direction. Regarding the urban population sample, the main primary health care facility was a starting point and samples were conducted around it, cluster sampling to identify one population's blocks in each urban area, then chosen the street in each population blocks. A Street was chosen randomly in each selected block. Then the first house was chosen once again randomly, after that every third house was typically selected. The fourth and final stage of sampling was stratified sampling for sex.

The sample size was calculated according to **Epi Info 2000**. A sample size of 2340 was utilised, using a special formula based on the lowest reported prevalence of malnutrition amongst the elderly in Egypt; about 8.0% (at a confidence interval of 95% and precision of 2%). The stratified and cluster sampling methods had been considered, and the calculated sample size was tripled to achieve the same precision. Finally, the sample was increased by 10% to overcome problems related to non-responses and missing data. Ultimately, 2219 persons agreed to be interviewed and to participate in the study with a response rate of more than 90%.

The study was conducted during a period of 6 months (from September 2014 to February 2015). A total of 2219 subjects (1164 males and 1055 females) were interviewed with a structured Arabic questionnaire consisting of the following sections:

1. The first section required socioeconomic data including age, sex, residency, marital status, level of education, previous occupation and the number of family members living together.
2. The second section consisted of an evaluation of the health status through the medical history of chronic diseases, such as hypertension, diabetes, coronary heart diseases with hypercholesterolemia, cerebrovascular disease, peripheral neuropathy, Parkinsonism, osteoarthritis, chronic liver and kidney diseases, vision and hearing impairment, and prostatic enlargement.
3. The third section was a Mini-Nutritional Assessment Short Form (MNASF) (Arabic version); an effective tool that fulfils many criteria for screening, within a mere 5 min. It distinguishes people at nutritional risk without laboratory investigation. The recent version of the MNASF was developed in 2009 (Kaiser, Bauer, & Ramsch, 2009) and consists of 6 questions related to food intake, weight loss, mobility, psychological stress or acute disease, and the presence of dementia or depression. Scores of 12–14 are considered normal nutritional status; 8–11 indicate risk of malnutrition; and 0–7 thus indicates malnutrition.
4. The fourth section was determination of the psychological status and the risk of depression on a scale first developed in 1982 specifically for old people describing their feeling in the past week, known as Geriatric Depression Scale Long Form (GDSLF), and utilised as a routine part of a comprehensive geriatric assessment. The GDSLF (Arabic version) is a self-administration screening tool to assess depression, and rates its severity among the elderly. It consists of 30 queries in the simple form of yes/no responses. The GDSLF range from 0 to 9 is classified as normal, whereas 10–19 is considered as mild depression, and 20–30 is rated as severe depression (Yesavage et al., 1982; Wrobel & Farrag, 2006).