

AN ASSESSMENT OF THE NUTRITIONAL STATUS OF INDEPENDENT ELDERLY ADULTS, 65YEARS AND ABOVE IN GWERU ZIMBABWE

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ABSTRACT:

Nutrition is an important determinant of health in persons over the age of 65years. Malnutrition in the elderly is often under diagnosed. Careful nutritional assessment is necessary for both the successful diagnosis and development of comprehensive treatment plans for malnutrition in this population. The purpose of this assessment is to provide clinicians with an educational overview of this essential but often under recognized aspect of geriatric assessment. This assessment will review some common issues in nutrition for the elderly .In the older population, undernutrition rather than overnutrition is the main cause for concern, since its relation to morbidity and mortality is stronger than that of obesity. The prevalence of malnutrition increases with escalating frailty and physical dependence. The complex biological process of ageing is accompanied by many socioeconomic factors that also impact on nutritional status. Contributing factors are altered smell/taste, poor dental health and age-related achlorhydria; in addition a decrease in physical activity leads to reduction of lean body mass and accumulation of body fat. Also important are social factors such as poverty and isolation, psychological factors such as depression and dementia, and medical factors such as poor visual acuity and prescribed medication. Many of these are reversible or responsive to treatment. Malnourished older people are at increased risk of falls, lengthy hospital stays and rehabilitation,

institutionalization, postoperative complications, infections, pressure ulcers, poor wound healing, impaired muscle and respiratory function and death.

KEYWORDS:eldery,nutritional status,independent

INTRODUCTION

Ageing in man is accompanied by changes, which may impair food acquisition, digestion, and metabolism. Poor nutritional status may be partly related to clinical risk indicators other than age, such as underlying disease state, tissue inflammation, diet-medication interactions, or functional capacity.

Elderly individuals are at increased risk for problems that affect their nutritional status. The problems affect functional, social or financial status and access to food and drink. These problems can affect quality of life and the ability to perform activities of daily living, including eating (Nweze 2004). A nutritious daily diet is one factor that can assist people who are older in maintaining optimal levels of health and preventing or delaying the onset of disease (Huxley 2007). The Dietary Reference Intake (DRI) are the quantities of nutrients that form the basis for planning and assessing diets. The DRI's include the Recommended Dietary Allowances (RDA), the nutrient levels that meet the requirements for nearly 97-98% of healthy people. According to the RDAs, elder people have the same nutrient requirements as their younger counterparts, yet most need fewer

calories(Berber 2001) .Vitamin D, B₆ , and calcium are exceptions and are needed in greater amounts for those 51 years old and older (Ritz 2001). Therefore a nutrient dense diet with fewer calorie laden foods becomes crucial at older ages of the life cycle. The best way to establish a nutrient dense diet is to balance a variety of food choices that are adequate to meet nutrient and caloric needs. A food guide pyramid specifically for those over 70 years of age recommends 1200 to 1600 calories from whole grain foods, a variety of coloured fruits and vegetables, low fat dairy products, lean meats, fish and poultry and 2litres of fluid daily.

The USDA (United States Department of Agriculture) food pyramid, now known as My Pyramid, has been updated to meet the special nutritional needs of older adults.

The Modified My Pyramid for Older Adults, developed by researchers at Tufts University (2002), continues to emphasize nutrient-dense food choices and the importance of fluid balance, but adds additional guidance about forms of foods that could best meet the unique needs of older adults. The importance of regular physical activity is also stressed.

Older adults tend to need fewer calories as they age because they are not as physically active as they once were and their metabolic rates slow down. Nevertheless, their bodies still require the same or higher levels of nutrients for optimal health outcomes (Forrester 2000).

Regular physical activity is linked to reduced risk of chronic diseases and lower body weight. Physical activity is one way to avoid weight gain in later years and its adverse consequences. In addition, regular physical activity can improve quality of life for older adults (Donatelle and Davis,1998)

The Modified MyPyramid for Older Adults includes icons depicting packaged fruits and vegetables in addition to fresh(Villareal 2000). Bags of frozen pre-cut vegetables that can be resealed or single-serve portions of canned fruit

may be easier to prepare and more cost-effective for people living alone.

Data collection procedures

Measures of nutritional status are usually valuable in as much as they maybe predictive of health outcomes. The practical requirements for assessment of nutritional adequacy arise from the need to intervene or improve the nutrition of individuals or populations. The major categories of nutritional assessment strategies include dietary, anthropometry, and biochemical status, functional and clinical status (Gibson 1990).

1.Mini –Nutritional Assessment

Respondents were interviewed using a Mini-Nutritional Assessment form to obtain some information about their health status.

2.The dietary interview

This was done by a food frequency questionnaire to probe the frequency with which specified food items are usually eaten.

The interview comprised of a face to face interview to collect information about the respondent's usual dietary behavior, any foods that were avoided and the reasons for doing so, using a food frequency questionnaire.

3.Anthropometry

Anthropometry involves physical measurement of some or several aspects of human body size, which, when related to normative values, are taken to be outcomes of nutritional experience (WHO 1995).In this assessment the researcher carried out waist, hip, height and weight measurements. In deciding which measurements should be taken, a number of factors were considered, including the acceptability of the measurements to the respondent as well as the accuracy of the researcher in taking the measurements.

Body mass index (BMI)

BMI was estimated by dividing weight(kg) by height squared(m²). Individuals are considered malnourished if their BMI is less than 18.5, normal from 18.5 to 24.5 and overweight if greater than 25 (Shuran and Nelson 1986). BMI cutoffs of 25, 30 and 40 are used internationally to define mild, moderate and severe obesity respectively (Shetty and James 1994).

Waist and hip circumferences

According to Brownie (2006), the ratio of waist to hip circumference gives indirect information on the distribution of body fat stores. The location of body fat is associated with health risks, in particular, cardiovascular disease. Guidelines suggest that for men, a ratio of 0.95 or greater and for women 0.85 or greater, indicate a potential health risk.

The waist is defined as the midway point between the iliac crest and the lower rib (Ritz 2001). He also defined the hip circumference as the maximum circumference over the buttocks and below the iliac crest. In preparation for these measurements, the respondent was asked to wear only light clothing and to have recently emptied their bladder.

4. Physical activity

The main purpose in collecting information on levels of physical activity was to allow an investigation of the relationships between dietary intakes, particularly energy intakes, body composition (BMI) and physical activity levels. According to Johnson and Kimlin (2006), physical activity is any force exerted by skeletal muscle that results in energy expenditure above resting level. Gibson (1990) states that, exercise is a subset of physical activity, which is planned, structured, repetitive and aimed at improvement or maintenance of any aspect of fitness or health. If the body does not use all the energy it takes in as food for growth, activity, thermogenesis, it will be stored as fat.

5. Assessing functional ability by self report (ADL and IADL)

This involved asking subjects whether they were capable of performing a task by themselves or with assistance. Activities of Daily Living (ADL) refer to self care activities such as bathing, dressing and eating, whilst Instrumental Activities of Daily Living (IADL) require a higher level of functioning such as shopping, food preparation and housekeeping (Geissler and Powers 2000).

6. Blood Pressure

High blood pressure is a serious disease that can lead to coronary heart diseases, heart failure, and stroke and kidney failure. Vaughn (2004), states that blood pressure (BP), is the force of blood against the walls of the arteries as the heart pumps blood. If this pressure rises and stays high over time it can damage the body in many ways. BP is measured as systolic and diastolic pressures. Systolic refers to BP when the heart beats while pumping blood, whilst diastolic refers to B.P when the heart is at rest, between beats (Vaughn 2004).

MATERIALS AND METHODS

A qualitative research design was employed. According to Creswell (2009), qualitative research is a means of exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participants' setting, data analysis inductively building from particular to general themes and the researcher making interpretations of the meaning of the data.

Population and sample

According to Carallis and Sharma (2004), a population is a group of individuals or elements from which the investigator is able to select a sample. The elements or individuals making up the population should possess the characteristics required by the researcher.

The population was elderly people aged 65 years and above who were living alone.70 people were selected from both urban and rural areas, the urban areas included the following low and high density suburbs,such as Lundi Park(8),Ivene(5),Southdowns(4),Mambo and Ascot(12),Senga(6),Kopje (3),Winsdor park (4) and Lower Gweru (28). The sample from the rural areas was confined to Lower Gweru.

Sampling method

According to Patton (2002), sampling is the selection of a sub-group that can accurately represent the whole population. This sub-group must be a true representative of the population.Reinard (1998), states that in any field of scholarly research, researchers must set up a process that assures that the different members of the population have an equal chance of selection. This allows researchers to draw some general conclusions beyond those people included in the study.

RESULTS

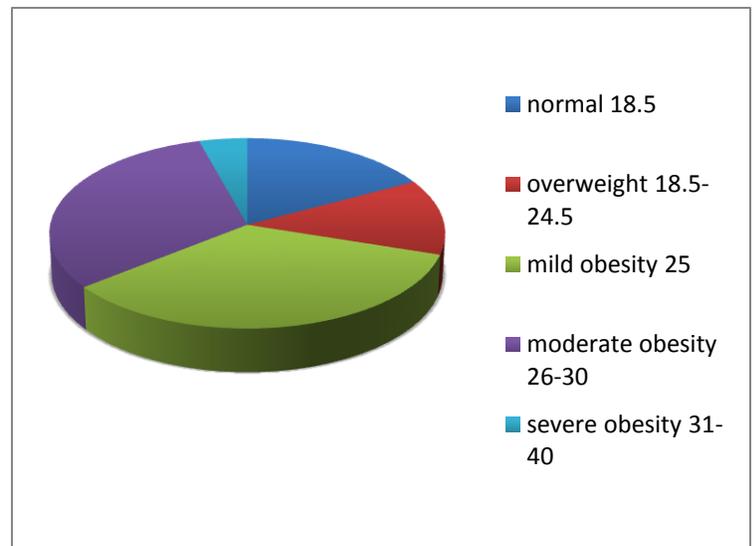
Factors affecting nutritional status

Factor	Reason
Economic hardship	Low pension schemes
Disease	Problems of aging
Need for self care assistance	Problems of aging
Eating poorly	Lack of nutrition education and money to buy food
Tooth loss	Aging and lack of money to have fixed dentures
Reduced social contact	Immobility
Multiple medication	Increased number of complications and side effects of aging

These were some of the major difficulties gathered from the mini nutritional assessment. Most of the elders survive on a very small pension fund and cannot afford healthy food and health care, thus most diseases, including those of aging are not treated. Poor vision, poor muscle coordination and reduced bone mass means they cannot perform a lot of activities for themselves and would need assistance.Toothloss resulted in eating poorly as there will be difficulties in chewing and swallowing. Reduced social contact and multiple medications also causes poor appetite, resulting in eating poorly.

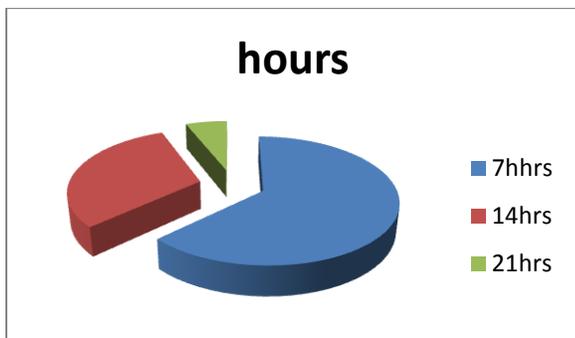
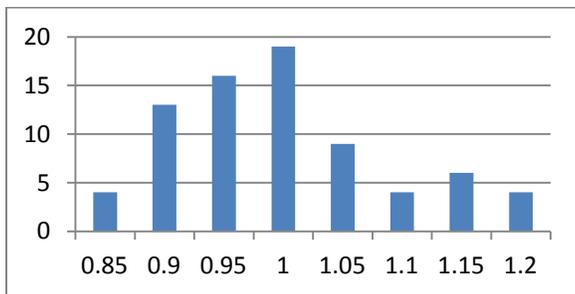
BMI

Approximately 35% of the population had mild obesity,31% had moderate obesity and 4% had severe obesity.The population with severe obesity mainly comprised of people from the urban areas.This could be due to the type of lifestyle they live,as much of this population is not physically active. WHO STEPS (2004), states that abdominal obesity is defined as a BMI above 30.The positive association between



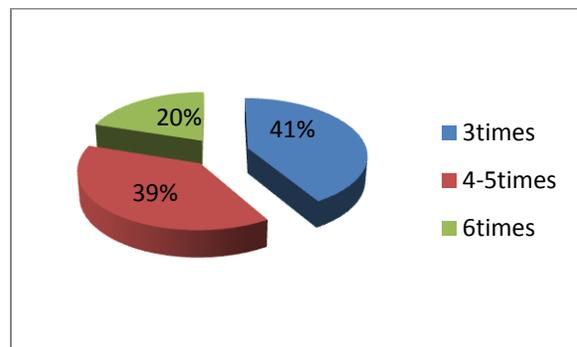
obesity and the risk of developing type 2 has been repeatedly observed, both in cross-sectional studies and in retrospective studies careful analysis of the relationship between obesity and adult onset diabetes confirms that abdominal obesity is an important risk factor, even after controlling for age, smoking and family history (Nishida 2010) According to Cameron (2003), the cutoff points for waist hip ratio for men is 0.90 and 0.85 for women. However, more than half of the population had waist hip ratios that were above the cutoff points. Waist hip ratio gives a good measure of abdominal obesity. There is convincing evidence that both generalized obesity and abdominal obesity are associated with increased risk of morbidity and mortality. The main cause of obesity related death is (Cardio-Vascular Disease) CVD, for which abdominal obesity is a predisposing factor.

Physical activity levels



The greater part of the population, 63% spent less than 7hours in doing any physical activity in a week. This accounts for the high rate of obesity amongst this population. 31% spent approximately 14hours doing physical activity in a week and a greater part of this population is made up of people from the rural areas.6% of the population spent less than 21 hours doing physical activity, which included walking briskly, riding bicycles and jogging or doing field work. Physical inactivity is now identified as the fourth leading risk factor for global mortality (Nweze2009).

Use of drugs



Older adults have more chronic medical conditions, and the level of polypharmacy increases with advancing age. Malnutrition and drug nutrient interactions are of concern in this population.53% of the population are taking 3 or more drugs, 19% are taking 2 or more drugs, whilst 9% are taking 4 or more drugs. Only 20% do not take any drugs, and this population mainly comprises of people from the rural areas. Multiple uses of drugs can cause drug-nutrient interactions, making other nutrients unavailable to the body. Use of medicine can cause blood loss, including anticoagulants, aspirin and arthritis medicines results in iron deficiency (Gibson 2005). The most popular drugs in this population are painkillers and blood pressure

tablets. Many medications interfere with zinc and older adults' medicine load can worsen zinc deficiency. Hildebrandt (2003) stipulates that zinc deficiency can depress the appetite and blunt the sense of taste, thereby leading to low food intakes and worsening of zinc status.

Blood pressure

	Reading	Percentage
Systolic	<120	11.43
	120-129.9	18.57
	130-139.9	52.86
	>Or = to 140	17.14
Diastolic	<80	8.57
	80-84.9	14.29
	85-85.9	58.51
	>Or= to 90	18.57

Blood pressure was measured as measure of general health. Approximately 17% of the population has a systolic blood pressure that is considered hypertensive whilst an additional 53% has a systolic blood pressure which is very high. 19% had a diastolic blood pressure which is hypertensive and 59% of the population had a diastolic blood pressure which was very high.

Results on functional ability

73% of the population could perform activities of daily, though 12% of them faced some difficulties. 27% could perform both activities of daily living and instrumental activities of daily living. Most of the populations facing difficulties in functional dependence were overweight.

Conclusions

Based on the findings of the overall assessment, the researcher concluded that poor nutritional status usually results from inadequate dietary intake or malabsorption. It may be related to neurological, psychiatric and other medical problems including polypharmacy. Social factors are also important as the results showed that

most of the elderly lacked support and interventions to improve their nutritional status. It is well accepted that nutrition plays a key role in health and well-being throughout the life cycle, yet many older adults do not follow the dietary guidelines. Early intervention may save considerable financial resources in addition to increasing the number of healthy, as opposed to frail, aged people. Adults over the age of 65 are at nutritional risk because of the greater burden of comorbid illnesses coupled with common physiological changes due to aging. Physicians need to maintain strong suspicions of malnutrition in the senior population, and should be aggressive in instituting preventive measures and treatment strategies for those at risk or those detected with malnutrition. Because of the impact of coexisting disease on overall nutritive status, a comprehensive, multidisciplinary approach is often helpful in addressing all contributing factors in the diagnosis and treatment of compromised nutritional health in the elderly.

By providing clinicians with an educational overview and providing tools to aid in the nutritional assessment in the elderly, it can then be emphasized that attention to the complexity of multiple comorbidities is essential to the successful nutritional assessment of elderly people.

Recommendations

In an attempt to address the problem under study, the researcher drew out the following recommendations:

- ❖ Nutrition education, which can improve dietary habits and has immense potential to maintain health and independence, delay or prevent institutionalization, delay morbidity and mortality, improve the quality of life for individuals and

reduce health care costs associated with aging and chronic disease. Thus, nutrition education should be integrated into all aspects of health promotion, disease prevention, disease management, and food assistance and should be evidence-based.

- ❖ Promotion of physical activity along with nutrition education will also be helpful, since physical activity and dietary choices both influence health and independence. However, without medical and clinical support, because of the unknown effectiveness of weight reduction in this population and the potential harmful effects weight loss may have on muscular and bone mass, it is not appropriate to initiate weight loss programs in older adults. It is critical, though, that dietitians and other nutrition educators encourage overweight and obese older adults to seek medical evaluation for potential weight problems. They can also recommend healthy food choices, help overweight individuals build the skills necessary to select, prepare, store, and consume foods for a healthy diet, and encourage physical activity.
- ❖ Nutrition intervention from the Ministry of Health and Non Governmental Organizations, targeting the elderly, with modification of the usual may make a big difference. This should be coupled with a multidisciplinary team management to perform regular review and continued monitoring, which is important in any nutritional intervention. This has the potential to improve nutritional status and lead to better rehabilitation outcome, decreased readmission rate, improved quality of life, and contribute to reducing health care costs.

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