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**USING NOVEL NUTRITIONAL ASSESSMENT TOOL TO ASSESS THE
NUTRITIONAL STATUS OF THE ELDERLY IN MAZENOD: THE CASE OF OLD
AGE PENSION SCHEME IN LESOTHO**

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USING NOVEL NUTRITIONAL ASSESSMENT TOOL TO ASSESS THE NUTRITIONAL STATUS OF THE ELDERLY IN MAZENOD: THE CASE OF OLD AGE PENSION SCHEME IN LESOTHO

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Abstract

Purpose: To assess nutritional status of elderly receiving non-contributory pension using NOVEL nutritional status assessment tool.

Methodology: The study was cross-sectional quantitative and qualitative survey carried out from January to May 2015. It was conducted at Mazenod Post Office, in the Maseru District which served as a focal point of collection of non-contributory pension grant for the pensioners in the catchment area.

Findings: Eighty percent of the participants were females and the rest males. The median age was 77years, 75% of them were widowed. In terms of education 80% had primary education, 15% secondary and 5% had tertiary education. The nutritional status according to the *Novel Score* indicated that 50% of the female were at risk of malnutrition, 28% females were malnourished and 22% were well nourished, while 50% of the males were at risk of malnutrition, 17% were malnourished and 33% were well nourished. There was a positive correlation without significance when the novel score was compared with mid-upper arm circumference in both males $r = (0.068, 0.608)$, and females $r = (0.068, 0.068)$ respectively. The correlation of nutritional status versus monthly income was negative $r = (-0.031, 0.813)$.

Unique contribution to theory, practice: The non-contributory pension scheme for elderly people in Lesotho seems to have little or no impact on their nutritional status, because its inception has been long and they have resorted to using it in solving other family problems. This reflected in the results where, more than two thirds of the females were malnourished and /or at risk of malnutrition. Also 67% of males were either malnourished or at risk of malnutrition. They cannot afford and access the basic physiological needs like nutritious food, water, health care services, security and many more.

Key word: *Elderly, Nutritional Status, Non- Contributory Pension*

1.0 INTRODUCTION

The world is currently experiencing a dramatic increase in the number of older people 65 years and above, perhaps due to decline birth rates, improved medical services as well as a better quality of life. It is believed that the world will soon be having more older people than children (Suzman & Beard, 2011). A recent survey in 2013 revealed that there were 841 million elderly people and this number is four times higher than the 202 million that lived in 1950. Also in 2013 the elderly in the less developed region was estimated at 554 million, this number is five times more than 108 million who lived in 1950. Furthermore the number of older people in less developed region is likely to triple by 2050 to about 1.6 billion. Meanwhile, older population of the more developed regions tripled between 1950 and 2013, from 94 million to 287 million, and it will increase further in coming decades, reaching 417 million in 2050 (United Nations, Department of Economic and Social Affairs, Population Division, 2013). Also in Africa the population of the elderly is expected to rise from just 50 million to nearly 200 million by the year 2050 (Pillay & Maharaj, 2013). Hagen (2008), mentioned that, Lesotho is being influenced by an increase in the elderly population, which was predicted to increase from 4.2% in 2003 to 5.8% in 2015. The classification of elderly varies from country to country depending on the cultural, economic and overall developmental stage of the society in question (Pillay & Maharaj, 2013). Thus, in developed countries, a person is considered elderly at the age of 70 years, the age at which a person is entitled to pension or retirement benefits. Healthy ageing is very important and good nutrition is critical to the overall wellbeing of people. The elderly can age successfully if they eat well, exercise regularly, and have a sense of control (i.e.) independence coupled with social, physical, psychological, emotional and economic support from family and friends (Hagen, 2008).

In most developing countries of which Lesotho is included, the elderly enter old age after a lifetime of poverty and deprivation, exposure to food insecurity, poor access to health care services and a diet insufficient in quality and quantity. Nevertheless, most Africans are still denied their right to social security in old age. The majority of poor elderly people especially women have worked all their lives in the informal sector, with no access to contributory pensions or other forms of formal social security (HelpAge International, 2009). It is a known fact that poverty is linked directly to food insecurity and malnutrition, and in order to alleviate the suffering, the Government of Lesotho (GoL) agreed to sign the International Labour Organization Convention on social protection of the vulnerable of which the elderly are part (Social Protection, 2017; GoL, UNP 2010). In Lesotho the old age pension was implemented by the government without any pressure or help from international financial institutions or donor organizations, to help alleviate poverty which goes hand in hand with malnutrition and ill health, improve conditions of living, and overall quality of life. HelpAge International (2004), described *Pension* as a range of cash income, mainly for older people, including both universal non-contributory and universal contributory cash transfers of various kinds. Universal contributory pensions are unconditionally available to all, while, means-tested (Universal Non-Contributory or old age) pensions are targeted to the poor, and are conditional on tests of earning, income or assets and usually come in monetary form. Since 1993 as sum of five hundred maloti (M500) which is currently equivalent to \$34.6 per month (as at June 19, 2019) is transferred to the

elderly citizens 70 years and above (Pelham, 2007). The non-contributory pension came as a sigh of relief and it is seen to play a major role in caring for young children whose parents have been affected by HIV and AIDS, and have little or no income or assets to support them. However, the impact of this cash transfer on nutritional status and food security has seen little research conducted on them.

Furthermore, malnutrition in the elderly tends to impact negatively on their quality of life. According to Charlton and Rose (2001), there is the need to regularly screen the elderly to identify those who are at risk and those who are malnourished for early intervention. Several Screening tools have been developed and validated in the developing countries. However, NNSAT is the tool that was developed specifically to suit the South African contest. According to Astellet *al.* (2010), NNSAT is a simple, validated touch screen for older adults to record their food and beverage consumption. It can be used daily to improve data collection and integrated information on their nutrition, physical and cognitive function and mental health to identify elderly persons at risk of under-nourishment and improve targeting of interventions. Novel Nutritional assessment tool for South Africans appears to have good sensitivity and specificity in terms of being able to classify subject who are malnourished or at risk of malnutrition (Charlton et al., 2005). Therefore there was the need to carry out this study to access the impact on the nutritional status of the elderly.

2.0 METHODOLOGY

The study design was a cross-sectional quantitative and qualitative method carried out at Mazenod Post Office a common gathering point for the pensioners living in the Mazenod catchment area in the Maseru District. The elderly 70 years and above who were eligible for the monthly non-contributory pension were randomly selected and a face to face interview was conducted using a structured questionnaires (comprising of socio- demographic, socio-economic information and Novel Nutritional Status Assessment tool for elderly South Africans (NNSAT) adopted for Lesotho). Epi Info version 7.0 (Dean et al.,2011), with an estimated population of 2500, an expected frequency of 80 %, confidence limits of 10 %, and the design effect of 1.0 and cluster 1 with the confidence level of 95% was used to obtain a sample size of 60. Those who were eligible to participate gave their consent. Sampling was done by choosing every 10th person and ensuring that a constant sampling interval was observed. NNSAT is a tool used to assess the nutritional status of the elderly. It is made up of 10 set of questions namely; motor disability, cognitive function (memory),self-perceived health status, use of and need for health aids, cognitive function (repeat memory phrase),number of meals per day, dietary intake-fruits and vegetables, food security, psychological stress/ illness and Mid upper arm circumference as the anthropometric measurement (Charlton et al., 2005). **NNATSA score ranges between 0-23.** For males and females score of < 9.5 = **malnourished**, males 9.5-14.5 and females 9.5-16.0 = **at risk of malnutrition**, males >14.5 and females scores of >16.0 = **well-nourished** (Charlton et al., 2005). The data obtained was analyzed using the SPSS software version 16.0 (SPSS, 2008) and the results were presented in descriptive statistics.

3.0. RESULTS AND DISCUSSIONS

3.1 Socio Demographic Characteristics of the Population

There were more females (80%) than males (20%), of these the median age was 77 years while the minimum and maximum ages were 70 and 90 years respectively. This is in consonance with WHO (2003), which stated that females have high life expectancy than males may be because males are mostly addicted to alcoholism and tobacco smoking which are the risk factors for chronic diseases and mortality. Furthermore, 75% of the elderly people were widowed while 25% were still married. Most of these were women. In most men migrate to work in the mines of South Africa, died as a result to mine ignition or explosion of gas or dust, earth quake, volcanic eruptions, and harsh climatic conditions leaving women and children. Also women able to take care of themselves when their spouses die they live independently as compared to men (UNDESA, 2013).

In terms of education, 80% of the elderly had primary education while 15% and 5% had secondary and tertiary education respectively (as shown in Table 1). Educational status plays a vital role in health and nutritional well-being of people. Most elderly people might not have access to formal education, as a result of family financial challenges, but can read and write Sesotho (the official language of the country). Majority of the elderly 72% were unemployed and 28% of them were self-employed. Most elderly people depend on monthly non-contributory pension because some their children are married abroad and cannot afford to financially support them; some their children are dead or unemployed. This amount (M 500=\$34.6) is however very small and so they end up spending most according to Croome & Mapetla, (2007), on their grandchildren (pay their school fees and buying clothes for them), instead of taking care of themselves. Most (72%) of these elderly people depend solely on the pension they receive monthly and only 28% of them get extra source of income. Also, 90% of the elderly said their monthly income have not changed over the past six months. This is important because the in the current dispensation where there is inflation and high cost of food, they are likely to suffer food insecurity and consequently malnutrition. Furthermore, the income status determine what, when, how and which kind of food will be eaten in the house.

About 42% of elderly people have been receiving the pension for over 9 years and the rest not that long. Linking this with their perceived lifestyle, they indicated that this money have come a long way to support them and their dependents. Lastly, 35 % of the elderly indicated that they perceived their lifestyle to have improved since they began receiving the non-contributory pensions

Table 1. Socio –demographic and socio –economic characteristics of the elderly

<i>CHARACTERISTIC</i>	(<i>N</i>)	<i>Percentage (%)</i>
AGE (<i>years</i>)		
70-74	13	22 %
75-79	28	46%
80-84	12	20%
85+	7	12%
EDUCATIONAL LEVEL		
Primary	48	80%
Secondary	9	15 %
Tertiary	3	5%
Monthly incomes (M1=Maloti; equivalent to R1 =Rands)		
100-500	43	72 %
501-1000	16	27 %
1001-3000	1	1%
Income statuses over the past 6 months		
More	3	5%
Less	3	5 %
The same	54	90%
Years of receiving pension		
0-4 years	20	12%
5-8 years	38	23%
9-11 years	42	25%

Source: Field survey, 2016

3.2 Nutritional Status Assessment (NOVEL nutritional Assessment tool)

The nutritional status (Novel) was assessed by aggregating the scores of motor disability, self-perceived health status, use of and need for the health walking aids, psychological stress or illness, cognitive function number of meals per day and dietary intake.

3.2.1 Motor Disability

Only 7% of the elderly were unable to walk 10 steps and 12% were not able to do heavy house chores (as shown in Table 2). Jahn et al., (2010) states that people above 70years find difficulty walking; this could be due to gait abnormalities which are a common complaint by the elderly. More especially those in older patients with no underlying pathology or herald a more serious illness and an auxiliary factor been progressive depletion of lean body mass resulting to dwindled muscle strength. Beattie & Nichols (2007), in a study showed that, elderly people can become frail as they age, they may experience physical pains and poor strength etc. which can make even simple tasks such as opening a can, peeling fruit, or even standing to cook a meal too strenuous .

3.2.2 Self-perceived health status

Thirty eight percent of the elderly perceived their health status was not as good as others, 34% perceived they had a better health status and 28% said their health status was about the same compared to other elderly people at their age (as shown in Table 2).

Gallegos-Carrillo (2006), mentioned that factors found to be associated with poor perceived health were age, female sex, social insecurity, being divorced, homemaker, disabled, unemployed, tobacco consumption, having a health condition, accidents and diagnosed with chronic diseases. However, the existing or increasing impairments in functional abilities were also found to contribute to self-health perceiving.

3.2.3 The Use of and Need for the Health Walking Aids

Interestingly, 61% of the elderly use or refuse to say they use cane or crutch or walking aids, 32% do not use this health aids and, do not need to obtain this aids and 7% elderly do not use this aids but need to obtain them(as shown in Table 2). Tabloski (2006), indicated that, muscles, bones and joints are affected by the ageing process and the joints become stiff in the process creating a greater risk of losing balance, falling and breaking bones. Osteoarthritis, osteoporosis and rheumatoid arthritis are more common in older people. However, the walking aids such as canes, crutches, walking sticks or walking frames (Zimmer frames) will be useful to prevent falling, enhancing stability as external or extrinsic factors including the environment and the way in which it may encourage or deter accidental falls, as some respondents said they need to have and use them.

3.2.4 Cognitive Function

The results shows that, 57% elderly had one or more errors recalling the mentioned mountains, while, 43 % of the elderly did not have errors recalling the mountains mentioned before (as shown in Table 2). Staff Reporter Times (online: 2017), said the hippocampus, a region of the brain involved in the formation and retrieval of memories, often deteriorates with age. Hormones and proteins that protect and repair brain cells and stimulate neural growth also decline with age, which can impair memory and lead to changes in cognitive skills. Furthermore, Helpage (2011), stated that, issues in memory can also be linked to several common physical and psychological causes, such as: anxiety, dehydration, depression, infections, medication side effects, poor nutrition, vitamin B12 deficiency, psychological stress, substance abuse, chronic alcoholism, thyroid imbalances, and blood clots in the brain, therefore, elderly tend to forget easily and can even miss their meal because they forget they did take a meal.

3.2.5 Number of Meals per Day

The study shows that 43% elderly eat less than 3 meals per day, while 57% eat more than 3 meals per day, (as shown in Table 2). The research results indicates that, most elderly people eat less than three meals per day, the decrease intake is from the reduction in the body's metabolic rate caused by a decrease in lean body mass and decreases in actual energy expenditures. This is in consonance with a study by the United States Department of Agriculture (2011) that, the elderly may have difficulty buying or preparing food because they are too frail, unwell or depressed, because they have memory problems, or because they are disabled. Also they may not be eating enough because they do not feel hungry, or because of a medical or dental condition.

3.2.6 Dietary Intake

Most of elderly 88% consume fruits and vegetables on most days while 12% respondents do not consume fruits and vegetables on most days; 53% consume milk and dairy products 3-4 days a

week, while, 47% do not consume milk and dairy products 3-4 days a week; 53% do eat beans or eggs two or more times per week, while 47% do not consume beans or eggs two or more times per week; 28% of the elderly people eat meat, fish or poultry every day while 72% do not manage to eat meat, fish or poultry daily (as shown in Table 2).

Elderly and their families may not know what foods elderly people need or how to prepare them and food may be unavailable or the person may be unable to afford it. Reduced social contact negatively affects food intake, eating too much or too little can affect health status of the elderly. Further the consumption of insufficient amounts of nutritious food such as fruits and vegetables and drinking; milk and milk products; beans or eggs; and meat, fish or poultry, also too much alcohol can also affect nutritional status (Crawley & Hocking, 2011).

3.2.7 Food Security

More than half 65% elderly people often or always run out of food before they get money to buy more, 2% about half the time and 33% never or sometimes run out of food before they get money to buy more. This is in consonance with the research by Ugalde et al., (2015), which stated that, the elderly's decreased earning potential and lack of access to food leaves them already vulnerable at increased health and nutrition risks. Those experiencing food insecurity have lower intakes of micronutrients and energy, more health problems, and functional limitations related to loss of independence. Most elderly are food insecure due to financial constraints and households in the lowest economic group experience low or very low food security. According to Ervin (2008), the Healthy Eating Index, 83% of older adults do not consume a good quality diet and those in poverty have lower scores than those not in poverty. Many factors that affect food insecurity in older adults include living below poverty line, high school drop outs, divorced or separated or living with a grandchild, are at greater risk of malnutrition (Locher *et al.* 2005).

3.2.8 Psychological Stress or Illness

Most of the elderly 87% have had psychological stress while 13% did not report to have psychological stress in the past three months (as shown in Table 2). Also 62% have acute illness in the past 3 months not including chronic conditions (hypertension), while 38% reported they did not have illnesses; and 57% elderly take 3 or more different prescription or over-the-counter medicines per day, while, 43% do not take 3 or more medications per day (as shown in Table 2). Majority of elderly people had stress in the past 3 months, probably because their body's natural defenses against stress gradually break down with age and may face failing health or dwindling finances or simply the challenges of retaining their independence (Woolston,2012). For elderly people, prolonged stress can come from chronic illness, disability, or the loss of a spouse, other sources may involve money, change in living situation, or family problems. Bates *et al.*, (2002), in Alomar 2014 mentioned that, greater number of elderly takes 3 or more different prescription or over-the-counter medicines per day; because, aging is associated with health complications such as hypertension, renal impairment, reduced immunity, changes in gastrointestinal tract, diabetes which is factors that determine prescription and over the counter medication intake.

Table 2. Components of Novel Nutritional Status Assessment Tool

Components of NNSAT	N	Percent (%)
Motor Disability		
<i>Difficulty Walking Ten Steps</i>		
Yes/ I don't know	4	7%
<i>Difficulty Working Heavy (House/Yard Work)</i>		
Yes/ I don't know	7	12%
The Use Of And Need For The Health Walking Aids		
<i>Cane/Crutch/ walking aid</i>		
Yes/ refuse to say	37	61%
No, but I need to obtain this aid	4	7%
No, I don't need this aid	19	32%
Self-perceived health status		
Better	20	34%
About the same	17	28%
Not as good as others	23	38%
Cognitive Function		
No error in recalling the address	26	43%
1 or more errors in recalling address	34	57%
Psychological Stress Or Illness (<i>past three months</i>)		
Yes/don't know	52	87%
Acute illness in the past 3 months not including chronic conditions		
Yes/don't know	37	62%
3 Or More Different Prescription Or Over-The-Counter Medicines Per Day Intake		
Yes/don't know	34	57%
Number Of Meals Per Day		
less than 3 meals per day	26	43%
more than 3 meals per day	34	57%
Dietary Intake		
<i>Fruits and vegetables</i>	53	88%
Yes		
<i>Milk and dairy products 3-4 days a week</i>	32	53%
Yes		
<i>Beans or eggs 2 or more times per week</i>	32	53%
Yes		
<i>Meat, fish or poultry daily</i>	17	28%
Yes		
Food Security		
Never/ sometimes	20	33%
About half the time	1	2%
Often/ Always	39	65%

3.3 Nutritional status (Over all NNSTA Score)

On the whole 78% of the females were malnourished or at risk of malnutrition while 67% of the males were also malnourished or at risk of malnutrition (Figure 1). Only 22% of females and 33% of males were well nourished according to the NNSTA score.

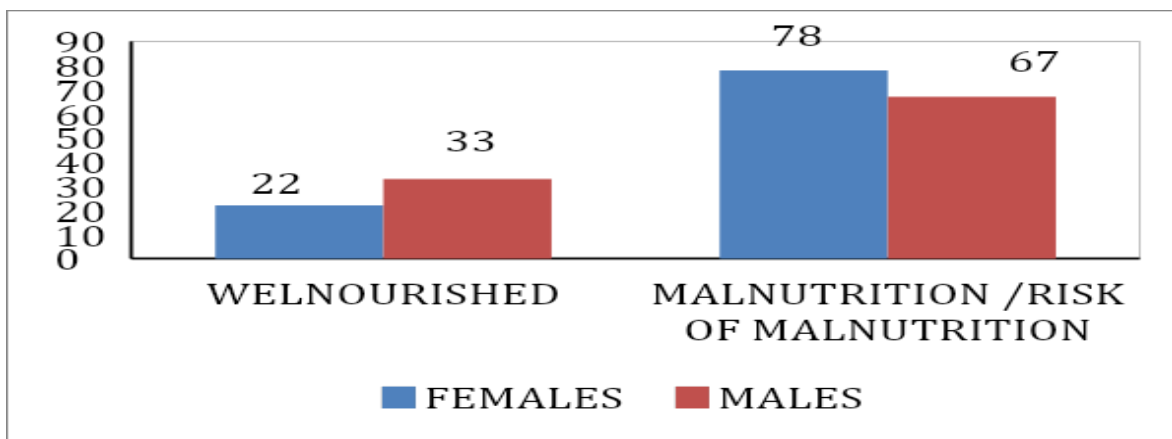


Figure 1: Nutritional Status –Novel Nutritional Assessment

4.0 CONCLUSION AND RECOMMENDATION

The non-contributory pension is expected to impact the lifestyle and nutritional status meeting the recommended dietary intake of the elderly people, even-though it seems to be diminutive to have greater impact on their current nutritional status. This may be because they tend to have more commitments in terms of caring for orphans and for other social needs. Most elderly people live below poverty line, and are food insecure do not consume adequate diet that will improve healthy aging, and are malnourished, because they may have difficulty buying nutritious food due low non-contributory pensions they receive or inability preparing food because they are too frail, unwell or depressed, because they have memory problems, or because they are disabled, they may not be eating enough because they do not feel hungry, or because of a medical or dental condition. However, it would be appropriate if other livelihood projects or safety nets to generate other income for their dependents to minimize the burden on elderly on the non-contributory pension.

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