

Assessment of Food Choices and Food Preparation Practices as a Marker for Readiness to Change Eating Habits among Women Aged 19-60 Years in Lesotho: A Cross-Sectional Study

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ABSTRACT

Introduction: Women in Lesotho may not consider changing their nutritional practices and lifestyles, because they may not be aware that there is anything that needs changing. This could be due to the fact that women in Lesotho experience many nutritional challenges and are survivors of a complex nutritional environment which predisposes them to negative socio-demographic factors which in turn predispose them to malnutrition. The purpose of this study was to assess food choices, food preparation methods and perceptions of personal control among women aged 19-60 in Maseru and Berea districts in Lesotho.

Methods: A cross-sectional study was designed and implemented among 206 women aged 19-60 in Maseru and Berea districts in Lesotho who were randomly selected using a sampling frame. Food choices, food preparation methods and perceptions of personal control were assessed using a knowledge, attitudes, beliefs and practices (KABP) questionnaire designed by the researcher. The theories of health behaviour including, the stages of change, and theory of reasoned action /planned behaviour were used as the framework of the questionnaire. Each questionnaire was completed in an interview with each participant.

Results: Results reveal that 71.4% of the participants had one member of the family employed, 33.3% of these reported a monthly family income of between M100 and M500; running water only available to 27.8%; water access predominantly a communal tap (63.9%).

Only 35.7% compiled a budget for food every month and sometimes (35.7%), while 80.4% reported never compiling a budget; a few drew a list of foods to buy each week (38.4%), sometimes (34.1%) and never (53.7%) or each month (38.4%). Moreover, 87.7% believed in their own power to make decisions about the food they ate, 79.1% had an intention to eat a healthy diet; 78.4% believed in the information from a nurse while 47.8% believed everything that the radio or television said about food. Moreover, 56.7% did not always eat according to their culture.

Conclusion: The study concluded that participants were at different levels of readiness in relation to differing health behaviours. The participants were at a pre-contemplation stage of readiness when it comes to making healthy food choices, but they were at a transitional stage from contemplation to action when it came to other actions; were at an action stage when it comes to food safety and hygiene. Results further show that participants had negative perceptions of personal control regarding their intentions to make healthy food choices and perform healthy food actions. These mixed stages of readiness and negative perceptions may have been due to beliefs in the subjective norm.

Keywords: Food choices, food practices, Readiness to change, Intentions and attitudes

INTRODUCTION

This study was carried out in Lesotho, the country which is known for its unique physical features characterized by beautiful mountainous regions, foothills, the Senqu river valley and a small area of lowlands. These distinct physical features have created a difficult terrain that daunts health access and challenges communication and agricultural production. Over and above these are unpredictable weather conditions marked by prolonged droughts, erratic rains and very cold winters. These ecologically beautiful but unfavourable natural features, coupled with the negative socio-demographic factors that haunt the Country, may have been responsible for Lesotho taking 165th position out of 189 countries published on the global Human Development Index (HDI),¹ with food poverty line of M352.39 and the poverty rate of 50%.² The socio-demographic and health factors including, but not limited to, high prevalence of gender-based violence and domestic violence in particular, HIV/AIDS, malnutrition, inadequate and inequitable health provision, inadequate health and nutrition-related knowledge, negative attitudes, beliefs and practices are inverse to good nutrition and health.

Problem statement

From the foregoing background, which puts into perspective broader environmental factors as well as person-related issues regarding nutrition in Lesotho, it is evident that the following challenges remain unresolved: (1) women in Lesotho experience many nutritional challenges and are survivors of a complex nutritional environment which predisposes them to negative socio-demographic factors which in turn predispose them to malnutrition; (2) Basotho women's nutritional status is challenged in terms of food intake, as a result of their food practices; and (3) women in Lesotho still have limited nutrition-related knowledge and have negative attitudes, beliefs, practices and lifestyles related to nutrition. As a result, the women

may not consider changing their nutritional practices and lifestyles, because they may not be aware that there is anything that needs changing.

It is these complex macro and micro socio-demographic challenges that impact on people's nutritional practices in Lesotho. Over and above these, there are challenges that women experience on a larger scale than males, in particular, HIV/AIDS and domestic violence (although these are beyond the scope of this study), all impacting on nutrition. These factors, and the fact that women are homemakers motivated the focus of this study on women.

Objective

The purpose of this study was to assess socio-demography, food choices; food preparation practices and perceptions as markers for readiness to change among women aged 19-60 years in Maseru and Berea, Lesotho.

MATERIALS & METHODS

A cross-sectional study was carried out among 444 women aged 19-60 years. The participants were randomly selected per village using a sampling frame. Villages in urban and rural areas of Maseru and Berea were sampled and every second village was selected until the 10th village was reached. An urban and rural area was defined according to the Lands Surveys and Physical Planning (LSPP) boundaries in Lesotho.³ The two districts were selected for the study because they were fairly accessible in both urban and rural areas. A list of villages was accessed from the Bureau of Statistics and a sampling frame for accessible villages was drawn. Accessible villages were those that could be reached by car. Women who met the inclusion criteria and signed informed consent forms volunteering to participate in the study were included. One hundred and eighty-seven (187) and 257 women from urban and rural areas respectively participated in the study. Food choices and food preparation practices and perceptions were assessed using a semi-structured

knowledge, attitudes, beliefs and practices (KABP) questionnaire designed by the researcher. The questionnaire structure and questioning mode was guided by the AHA study that was carried out in South Africa in 2012. The researcher and assistants completed the questionnaires in an interview with each participant. Food practices including food choices and food preparation methods and perceptions were assessed by asking participants to indicate whether or not they performed certain actions when handling food. Research assistants were recruited (from the National University of Lesotho [NUL] Nutrition Department). Research assistants were useful in conducting the interviews alongside the researcher after being trained to understand the aims and objectives of the study and the interview procedure with the questionnaire.

STATISTICAL ANALYSIS

Results were analyzed by a Bio-statistician from the department of Biostatistics and Physiotherapy at the University of the Free State, and they were described by means of descriptive statistics, namely frequencies and percentages for categorical data and means and standard deviations or percentiles for continuous data, calculated per strata.

Reliability/ Reproducibility

Reliability was determined by means of administering the questionnaire to a randomly selected 10% of the target population with similar characteristics to the sample one month apart.^{4,5} Data collected were compared to the main study and a difference margin of 20% would mean unreliable data and those responses would have been discarded from the study if they were found. However, none were found.

Validity

To assess validity, the degree of accuracy of the semi-structured questionnaire in measuring what it was supposed to measure was determined by designing it in

accordance with the standard methods as suggested by health psychology and health promotion experts and followed the suggested guidelines of the theories of health behaviour used in the study.^{6, 7, 8, 9} Furthermore, the questionnaire was designed to use the questioning mode of each model, for example, theory of reasoned action, theory of planned behaviour and the stages of change model, which are the premises of this study. Making theories of health behaviour a framework for a study is in itself valid. In addition, the questionnaire was compiled according to information obtained from in-depth literature review and all questions were directly related to the aims and objectives of the study.

Ethical aspects

Approval from the Ethics Committee of the Faculty of Health Sciences of the University of the Free State and from the Ministry of Health in Lesotho were obtained before commencement of the field work. The information document as well as clear verbal explanation proved indispensable in dispelling expectations of benefits that were not going to accrue from participation in the study. For example, participants expected medical examinations including high blood pressure tests, diabetes tests, and HIV and AIDS tests. They also expected to be given food and free medication.

After random selection of villages to be included in the study, the researcher arranged information sessions with the community leaders/counsellors to sensitize them to the intended study, and to obtain consent. The community leaders were asked to call *lipitso* (a *pitso* is the most effective way of disseminating information to the communities in both urban and rural areas in Lesotho) where information related to the project (as explained on the information document), was disseminated to the community members, and women were invited to participate in the study. Dates, time and length of time for data collection were agreed with the volunteering participants. Participants were informed that

the study bore no potential risks to them and was entirely voluntary. Participants were assured of anonymity of their individual identities. On the set and agreed dates, after obtaining informed and signed consent from the volunteers, interviews commenced. All discussions took place in the participants' language of choice (Sesotho or English).

Pilot study

A pilot study was carried out to verify feasibility, appropriateness and acceptability of the methods employed in the study¹¹ as well as the length of time it would take to complete the questionnaire. One village each was randomly selected from Maseru and Berea for the pilot study. Twenty-six women were included in the pilot study. This enabled the questionnaire to be refined to the point where no more changes were

needed. For example, changes which were made to the socio-demographic questionnaire included an addition of the option "no toilet" to the question about a type of toilet. Changes were also made to the nutrition-related practices and beliefs questionnaire in which an additional option, "I have a garden"; was added.

RESULT

In this study, food practices included food choices, food preparation methods and other nutrition-related actions and perceptions. These factors were explained by the participants performing all or some of the activities and expressing their perceptions as outlined in tables (ii), (iii), and (iv). Table (i) depicts the socio-demography of the participants.

Table (i): Socio-demographic profiles

Profile	N	%
Age groups (years)		
<25	20	9.7
25 and < 30	31	15.1
30 and < 35	19	9.2
35 and < 40	25	12.1
40 and < 45	26	12.6
45 and <50	33	16.0
50 and <55	31	15.1
55 and <60	21	10.2
>60	1	0.5
Education		
Primary School	112	54.4
Form A-C	51	24.8
Form D-E	25	12.1
Tertiary	18	8.7
Location		
Urban residence(n = 204)	71	34.8
Rural residence (n = 240)	133	65.2
Employment status		
Unemployed	30	14.5
Self-employed	24	11.6
Subsistence farmer	4	1.9
Employed	39	18.8
Part-time/piece job	14	6.8
Profile	N	%
Ownership of:		
A house/home	214	86.9
Kitchen	172	83.5
Water access		
Own tap		
Communal tap	131	63.9
Type of toilet		
Water system	65	26.5
Pit latrine	127	61.7
VIP	28	13.6
No toilet	33	16.0
System of cooking		
Use cast iron pot	118	57.8
Number of times iron pot used		
Once a week	7	6.0

Very few times	7	6.0
More than once a week	10	8.6
Every day	92	79.3
Access to: n = 206		
Electricity	65	31.6
Type of fuel used		
Open fire (cow dung, maize sticks)	72	29.3
Gas/ electricity	18	8.7
Number employed in a household		
None	22	12.9
One	122	71.4
Two	26	15.2
Family income per month		
R100-R500	68	33.3
R501-R1000	33	16.2
R1001-R3000	25	12.3
R3001-R5000	13	6.4
Over R5000	12	5.9
Don't know	22	10.8

The socio-demographic profile of the women depicted in table (i) portrays unfavourable sociodemographic circumstances of the participants. These include low educational level [primary school leavers: 112 (54.4%)], low income [majority earning between R100-R500 per month] and high unemployment: only 39 (18.8%) employed. The median room

density among the participants was 0.3, with a range of 1 to 11 people living in a household. Moreover, only 61 (31.6%) reported that they had electricity in their homes, 72 (29.3%) reported that they used cow dung, maize sticks and wood as fuel for cooking. Among the latter, 118 (57.8%) reported using a cast iron pot, with 92 (79.3%) using it on a daily basis.

Table (ii): Actions related to food choices

Food choices actions		
	N	%
Compile a budget for food purchases every month	245	
Everyday	82	33.5
Sometimes	96	39.2
Never	67	27.4
Compile a list of foods to buy every week	245	
Everyday	26	10.6
Sometimes	74	30.2
Never	145	59.2
Compile a list of foods to buy every month	245	
Everyday	95	38.8
Sometimes	85	34.7
Never	65	26.5
Buy anything that comes into my mind while grocery shopping	245	
Everyday	49	20.00
Sometimes	56	22.86
Never	140	57.14
Only buy food that I can afford	245	
Everyday	145	59.2
Sometimes	80	32.7
Never	20	8.2
Only buy food that I like	245	
Everyday	84	34.3
Sometimes	79	32.2
Never	82	33.5
Grow different kinds of vegetables in my garden	245	
Everyday	157	64.1
Sometimes	47	19.2
Never	41	16.7
Grow only cabbage in my garden	245	
Everyday	12	4.9
Sometimes	70	28.6

Never	163	66.5
Have a garden	244	
Everyday	183	75.0
Sometimes	4	1.6
Never	57	23.4
Buy food every day after work	245	
Everyday	9	3.7
Sometimes	54	22.0
Never	182	74.3

Table (ii) depicts budgetary habits of the participants regarding food. Results show that only 82 (33.5%) of the participants reported compiling a budget for food every month. In addition, 26 (10.6%) reported that they drew a list of foods to buy each week, while 74 (30.2%) reported only doing it sometimes. Furthermore, 95 (38.8%) drew a list of foods to buy every month while 85 (34.7%) only did it sometimes.

In addition, 140 (57.14%) of the participants indicated that they never bought anything that came to mind every time they went grocery shopping, while 145 (59.2%) and 59.1% reported at they bought only foods that they could afford every time, and sometimes respectively. Furthermore, table (ii) shows that 183 (75.0%) of the participants owned a garden; out of these, 157 (64.1%) reported growing different kinds of vegetables in their gardens.

Table (iii): Actions related to food preparation

Food preparation actions	N	%
	Wash hands with water and soap every time before touching food	245
Everyday	171	69.8
Sometimes	70	28.6
Never	4	1.6
Wash cooking utensils with warm water and soap every time after use	245	
Everyday	177	72.2
Sometimes	64	26.1
Never	4	1.6
Wash vegetables every time before cutting	245	
Everyday	239	97.6
Sometimes	5	2.0
Never	1	0.4
Wash vegetables every time before eating raw	245	
Everyday	195	79.6
Sometimes	31	12.7
Never	19	7.8
Wash fruits every time before cutting	245	
Everyday	178	72.7
Sometimes	49	20.0
Never	18	7.4
Wash fruits every time before eating	245	
Everyday	147	60.0
Sometimes	78	31.8
Never	20	8.2

In table (iii), the participants reported (1) washing hands with water and soap every time before touching food (171 (69.8%) everyday, 70 (28.6%) sometimes, and 4 (1.6%) never); (2) washing cooking utensils with warm water and soap every time after use (177 (72.2%) everyday, 64 (26.1%) sometimes and 4 (1.6%) never); (3) washing

vegetables every time before cutting (239 (97.6%) everyday, 5 (2.0%) sometimes); (4) washing vegetables every time before eating raw (195 (79.6%) everyday, 31 (12.7%) sometimes) and (4) washing fruits every time before cutting (178 (72.7%) every day, 49 (20.0%) sometimes and 18 (7.4%) never).

Table (iv): Nutrition-related beliefs informed by TRA/TPB*

Belief/planned behaviour	N	%
	I believe in my power to make decisions about the food I eat	244
Agree	214	87.7
Disagree	14	5.7
Do not know	16	6.6
I intend to eat a healthy diet from now on	244	
Agree	193	79.1
Disagree	11	4.5
Do not know	40	16.4
I usually eat what my husband/partner likes	239	
Agree	168	70.3
Disagree	42	17.6
Do not know	29	12.1
I eat what my neighbours and friends eat	245	
Agree	89	36.3
Disagree	97	39.6
Do not know	59	24.1
All the information that the radio and television say about food is true	243	
Agree	117	47.8
Disagree	40	16.3
Do not know	88	35.9
All the information that the nurse or health worker says about food is true	245	
Agree	192	78.4
Disagree	19	7.8
Do not know	34	13.9
I will not eat anything that is against my culture	245	
Agree	65	26.5
Disagree	139	56.7
Do not know	41	16.7

*TRA/TPB - Theory of Reasoned Action/Theory of Planned Behaviour

Table 4 depicts perceptions of the participants regarding intentions to change and adopt healthier eating habits. The table shows that 214 (87.7%) of the participants reported believing in their own power to make decisions about the food they ate, 193 (79.1%) reported that they had an intention to eat a healthy diet; 192 (78.4%) indicated believing in the information they got from a nurse while 117 (47.8%) reported believing everything that the radio or television said about food. Moreover, 139 (56.7%) of the participants reported that they did not always eat according to their culture. On the other hand, 169 (70.3%) of the participants indicated that they ate what their husbands ate while 97 (39.6%) reported that they did not eat what their friends and neighbours ate.

DISCUSSION

In this study, three questions were asked. First, the question of whether house-holds could produce and access food in the home to assure food security. Secondly, the question of how the food was handled and prepared in order to assure food safety and hygiene in the home and thirdly, the question of perceptions of personal control in relation to food choices and actions. The responses were then evaluated according to the stages of change/ trans-theoretical model of health developed by Prochaska and Diclemente (1984, 1986)¹² to describe the psychological stages of change individuals go through when trying to change an undesirable health behaviour.

To answer the first question, food practices were assessed by asking the participants to indicate whether or not they performed certain actions related to food production and access.

That very few participants were performing the positive actions including drawing a budget and a list for food to buy indicates that the participants were at a pre-contemplation stage related to making healthy food choices. Performing these actions indicate thinking and planning ahead what the family is going to eat throughout a certain period. The essence of budgeting and planning a diet is that it enables transition from a pre-contemplation stage to contemplation in relation to making healthy food choices.

The participants' reports that they bought only foods that they could afford most of the time denotes scarcity of money to buy food. This is not surprising as according to the socio-demographic profile of the participants in table (i), the majority of the participants had one member of the family employed with very little earnings which have to support between 1 to 11 people living in a household, thus exacerbating the food scarcity situation. This means that the food items the participants bought were pre-determined by need rather than by choice. It is important that individuals sacrifice some other less basic items in order to have more food. Access to food is the first step towards eating a healthy diet, a practice that has a multiplier effect to first, prevent disease and illness, and secondly to protect and promote health and assure a healthy family that would in turn have the capacity to work and produce more food.

It is also evident that a budget and a list of food items to buy would not be necessary because only a few items could be bought. For some people, spreading income to last them a whole month may never even cross their minds as, when they come across some money, they use all of it to buy foods that they have craved or needed all at once, or buy pieces of furniture to compete well with their neighbours and friends.

The socio-demographic profile of the women further indicates that the most represented participants in this study were the least educated primary school leavers and more rural than urban participants,

denoting low socio-economic status; therefore, predisposing the participants to inadequate knowledge and negative attitudes regarding food actions. Coupled with the other predisposing socio-demographic and economic factors, low educational attainment is in most cases synergistic with poverty, which bears heavily on women on whom home care responsibilities lie.

While home stability indicated by ownership of a home, also in table 1, could potentially create favourable conditions for good nutrition, the poverty situation may negatively impact on the likely positive outcomes.

Furthermore, the lack of electricity and running water in the majority of the homes, makes the women use cow dung, maize sticks and wood as fuel for cooking. With an income this low, and living in these unconducive circumstances, food security and food preparation processes could be challenging.

On a positive note, according to table 2, the majority of the participants owned a garden, grew different kinds of vegetables indicating a contemplation and a pre-action stage of change towards adopting desirable eating practices. Growing different kinds of vegetables presupposes inclusion of a variety of vegetables in the diet, which is definitely a pre-action stage. Will they go on to prepare and consume these vegetables? Well, the answer lies in what Stein and Temple¹³ call a plant-based diet that characterize that of Africans. African diets are known to provide most of their protein from plants as opposed to the animal-based protein in Western countries. The participants were showing recognition of the importance of planning through implementing home gardens and growing different types of vegetables to make food available in their homes. Availability of food in the home assures food security and readiness to move from contemplation to eating a healthy diet; to action.

To assess food preparation practices and answer the second question, participants

were asked to indicate whether they performed several hygiene practices when preparing food as reported in Table 3.

Health and health behaviour are determined by many socio-demographic and other broader social environmental factors. To a large extent, knowledge precedes the other determinants, regardless of whether it is misguided, in the case of inadequacy, or total oblivion, or whether it is adequate, regarding a health factor. In whatever form, knowledge shapes attitudes, beliefs and practices of a people. Therefore, health and nutrition-related practices will always be intertwined with knowledge, attitudes and beliefs. These psycho-behavioural attributes, as Contento⁶ calls them, are the core around which an individuals' health and nutrition-related decisions and practices revolves. They are highly vulnerable to the influences of the socio-political factors, which are usually more negative than positive, particularly in the developing countries like Lesotho. Among these factors are, observation/modelling from the environment in which one lives. These influences, individuals consciously or unconsciously observe and learn from their immediate environments namely, families, communities, school, work and society at large.

Hygiene manners and other methods of handling and preparing foods are a direct result of learning from the family and later on from interacting with the other social groups. Every individual is naturally entangled with these psychosocial environments and many have no control over them.^{14,7} Food preparation methods and hygiene are some of the practices that are passed on from generation to generation, through modelling/learning and imitating; they are a culture. Studies worldwide have shown that when it comes to health behaviour, social learning as posited by Bandura's Social Learning Theory (1986),¹⁵ is potentially the most powerful influence to adopting performance of any health behaviour, whether negative or positive. However, like all health behaviours,

hygiene practices can be harmonized, and should not be left to chance. In other words, we cannot just hope that people will "catch them...in a vacuum," people must be taught the healthier ways of performing these actions. To corroborate this assertion, diarrheal diseases have remained among the top-ranking risk factors for morbidity and mortality among the under-fives in Lesotho since 2010¹⁶ and was ranked 6th among the top 10 causes of death in Lesotho in 2018.¹⁷ These diseases are more often than not, a consequence of unhygienic practices. Looking at table 3, one would surmise that the participants have over reported their hygiene practices, or that there is inadequate knowledge regarding complete hygiene practices beyond those included in this study. Over reporting can be motivated by negative attitudes where people do not truly believe in the effectiveness of a health protective behaviour being recommended and choose their own traditional ways. I once witnessed an incident where people in the deep of the rural areas cleaned their houses only when they saw health educators approaching from a distance to take rounds. Assuming that the participants did not over-report their actions, women in this study were found to be positively performing the hygiene practices reported in table 3. These reports indicate positive hygiene practices among the participants, which they may have learned from their immediate social groups through modelling, and imitation, then consequently consciously or unconsciously enabling desirable health behaviour.

However, with the advent of Covid-19, it became apparent that lack of running water was a challenge to regular washing of hands as was required by the covid-19 protocol. The pandemic even gave rise to innovative ways of making hand washing easy. Keeping up with these actions could not have been easy as evidenced by the socio-demographic variables depicted in table 1, which revealed that running water was only available to 27.8% of the participants, with the predominant access to water being a

communal tap. Furthermore, ownership of a water system bathroom and toilet was low and people were still using a pit latrine and the veldt, with water system and VIP types being the least used.

Food choices and practices can also be influenced by social norms and traditions.

To answer the third question, and to establish the participants' susceptibility to social norms and pressures, the study assessed the participant's beliefs in relation to food using Fishbein & Ajzen's theories of reasoned action/planned behaviour.¹⁸ These theories propose that intentions precede performance of a health behaviour, while the intentions are in turn a function of attitudes, subjective norms and perceived personal control over decisions an individual makes in relation to a health behaviour. Several statements informed by these theories as a guide were used to establish intentions and beliefs about food among the participants. As depicted in Table 4, the participants reported positive intentions about food and eating, presupposing a contemplation stage of readiness to perform healthy nutrition-related actions. The participants' readiness to change was further indicated by believing in the information they got from a credible source (nurse), as opposed to those who believed everything that the radio or television said about food. The latter may be clouded by food fads and fallacies. Moreover, the participants' readiness was indicated by reports that their culture did not dictate what they should eat as opposed to the minority who believed in their cultural directives and those who did not know what they believed.

On the other hand, the majority of the participants indicated being under the influence of their husbands regarding decisions about food. In addition, the participants' reported positive beliefs in their own power to make decisions about the food they ate was weakened by the small percentage who reported that they were not under the influence of their friends and neighbours in relation to the food they ate.

These mixed perceptions indicate a pre-contemplation stage coupled with negative attitudes and beliefs in relation to food choices and practices.

CONCLUSION

The study revealed that participants were at different levels of readiness in relation to differing health behaviours. The participants were at a pre-contemplation stage of readiness when it comes to making healthy food choices, but they were at a transitional stage from contemplation to action when it came to ownership of home gardens and reported production of different kinds of vegetables and fruits; and they were at an action stage when it comes to food safety and hygiene. However, unfavourable socio-economic circumstances may have prevented the participants from fully performing all the positive hygiene and food safety practices that they reported they did. Findings further show that participants had negative perceptions of personal control regarding their intentions to make healthy food choices and perform healthy food actions. These mixed stages of readiness and negative perceptions may have been due to believes in the subjective norm.

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