

Lesotho Medical Journal



Cover photo:

Graduates of the Family Medicine M. Med-Fam Med Program 2022 convocation ceremony.

From left: Dr. Mamakhala Chitja, Dr. Moseme Makhele, Dr. Muila Kambulandu. Dr. Tilo Namane graduated in absentia.

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From the Editor

Revisiting the Establishment of a Medical School in Lesotho

Radiance Ogundipe, MD ^{1,2}

1. Lesotho-Boston Health Alliance, Florida 567, Maseru West 105, Kingdom of Lesotho
2. Lesotho Ministry of Health/Lesotho-Boston Health Alliance (LeBoHA) Family Medicine Specialty Training Program

Corresponding author: Radiance Ogundipe email: rogundipe@leboha.org.ls



It is so heartwarming to learn of the plans of the government of Lesotho to make another attempt to establish a medical school for Lesotho. This is such a welcome development given the medical manpower situation in the country and the present cost of undergraduate medical training procured in countries outside Lesotho. 2018 WHO country statistics for Lesotho gave a doctor population ratio of 4.73 per 10,000 population.¹ This is less than 50% of the WHO recommended ideal ratio of 10 per 10,000 population² and, anecdotal evidence suggests that many of the Basotho doctors may be practicing outside the country. The internship program under the aegis of Lesotho Boston Health Alliance (LeBoHA) has helped to facilitate the return of many of these doctors to practice in Lesotho after their internship. The Family Medicine Specialty Training Program (FMSTP), also under the aegis of LeBoHA, has provided a career progression specialization pathway for the doctors to further influence the retention of the doctors in Lesotho and strengthen the primary health care of the country. It is envisaged that as the LeBoHA introduces other lines of specialization into her training program, these may further help the medical resource situation in the health system of the country. The news of the government's decision to revisit the establishment of a medical school in Lesotho is a very welcome development.

The World Federation for Medical Education in a 2016 expert consensus (updated in January 2022) recommended seven criteria for the establishment of a new medical school. The criteria include establishing the need for the graduates of the school; the type of institution envisaged, the number of students and characteristics of the planned program; adequate clinical facilities for the training; financial plan for a sustainable program; infrastructure and access considerations; staffing: clinical, administrative and leadership; and student availability, support and resources.³ These criteria have largely been met in Lesotho, awaiting a strong government commitment to the project.

To avoid the abortive outcome of the first attempt at establishing a medical school from recurring, it is expedient to conduct a thorough systematic evaluation of the factors that led to the failure of the first attempt. It is important to involve all relevant stakeholders to determine the type of medical school and undergraduate training that will be acceptable and contextually relevant to Lesotho. The existing structures for medical education: the internship program and the FMSTP should be incorporated and built on, in defining the prototype medical school for Lesotho. The existing academic governing structure of the National University of Lesotho should be drawn on to provide needed administrative and governance support for the school.

Finally, sustainable funding for this venture needs to be proactively considered. Consideration should be given to the internationalization of the medical school, both as a supplementary source of funding

and as requisite to the standards of the Lesotho Qualification Framework. Medical training is expensive worldwide but the comparative cost of the present practice of medical training of Basotho outside the shores of Lesotho may give the needed motivation. Collaborative support of medical schools in the subregion may be invaluable and should be explored. Also, creating awareness of the populace and soliciting for support from the private sector may be helpful to achieve this noble project.

It is the opinion of the LMJ that a medical school for Lesotho is long overdue and necessary. The strong commitment of the government, a thorough review of the factors that contributed to the former abortive attempt at establishing the medical school, extensive consultation with all stakeholders, and careful planning of the project should help to ensure the success of the project.

Sincerely,

Radiance Ogundipe

Radiance Ogundipe, Editor

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Instructions for Authors of the *Lesotho Medical Journal*

How should I submit an article for the Next Edition? The next edition of the *Lesotho Medical Journal* (LMJ) is scheduled to be released in September 2023. For consideration and to allow time for peer review and printing, please submit your article by July 15, 2023 by email to Dr. Radiance Ogundipe - rogundipe@leboha.org.ls. Alternatively, you may submit your manuscript through the article submission portal on the Lesotho Medical Journal page of the Lesotho Boston Health Alliance (LeBoHA) website – www.leboha.org.ls.

Please include a cover letter, the manuscript, and any figures/tables (maximum 5) as separate documents.

What kind of articles do we publish? The *LMJ* publishes the following types of articles:

1. Commentaries – Discussion of current topics in health - maximum 500 words
2. Clinical Case Reports – reports of clinical cases that we can learn from - maximum 1,000 words
3. Original Research – maximum 3,500 words (exemptions for qualitative research that could be more)
4. Letter to the Editor – to make a comment on previous publications - maximum 400 words
5. Community Oriented Care Field Reports – maximum 3,000 words
6. Systematic Reviews – critical synthesis of research related to a clinical topic – maximum 3,500 words
7. Essays – Reflections from clinicians, patients, families, communities, and policymakers
8. New innovations in Medical Education or Clinical Care– Succinct stories of on-the-ground innovations
9. Photographs – Each edition will include a few photographs. Photos related to the Mountain Kingdom are most welcome.

How will the submission be reviewed? The editor and two members of the Editorial Board will review each submitted manuscript. Articles will be accepted, rejected or the authors will be provided specific feedback and asked to revise and resubmit the manuscript. In the future, we are planning a more formal peer-review process. The details will be published in future editions of the *Journal*.

How should the manuscript be prepared? In general, manuscripts should be prepared according to guidelines described in the ICMJE's Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals. <http://www.icmje.org/recommendations/>

Is there a fee for publishing in the *LMJ*? No, and the authors retain copyright to their published article.

Is advertising accepted by the *LMJ*? Yes, we now are accepting advertising in order to partially cover the cost of publication. Current advertising costs are:

- a. Full page M5,588
- b. Half page M2,759
- c. Quarter page M1,379

Is there a Conflict of Interest Policy? Yes, all authors of accepted manuscripts will be required to declare relevant conflicts of interest.

Can I see previous editions of the *Journal*? All previous editions of the Lesotho Medical Journal (formerly the Lesotho Medical Association Journal) are now available online and can be freely downloaded at <https://www.leboha.org.ls/journals.php>

Factors Contributing to Teenage Pregnancy in Lesotho

Mphunyane E. Makhoba BScN PHC ^a and Shelile, Z.Mpho MNsc ^b

^a Paray Mission Hospital, Thaba-Tseka, Lesotho

^b Department of Nursing, Faculty of Health Sciences, National University of Lesotho, Roma, Maseru, Lesotho

Corresponding author: exiniamphunyane@gmail.com

ABSTRACT

BACKGROUND: Teenage pregnancy is a global issue that raises concerns for all people who have an interest in the health and well-being of teenagers and their children. Factors associated with teenage pregnancy are multiple. The study aimed at identifying the individual factors that contribute to teenage pregnancy at a selected Health Center in Leribe.

METHODS: The researchers adopted a cross-sectional descriptive quantitative research design. A structured questionnaire was administered using face-to-face interviews to collect data from 50 female teenagers who met the selection criteria identified through non-probability convenient sampling. Data was analyzed using Statistical Package for Social Science (SPSS) version 21 (New York, USA).

RESULTS: A total of 50 teenage girls participated in the study. Among the contributing factors assessed, data analysis showed that sexual abuse, cultural factors, early independence, peer influence, drugs, and alcohol were reported to increase the likelihood of teenage pregnancy.

CONCLUSION: Demographic, behavioral, familial and social factors are important factors contributing to teenage pregnancy in this selected health center. The study revealed various factors contributing to teenage pregnancy, but drugs and alcohol were regarded as the main factors, followed by sexual abuse and early independence.

Keywords: Contributing factors, Emmanuel Health Center, Leribe, Lesotho, Teenage pregnancy

INTRODUCTION

Teenage pregnancy is considered a global issue and it affects many teenagers thus limiting their future.¹ Pregnancies among teenage girls have detrimental effects to the teenagers as well as to their infants.² Teenage girls who become pregnant at the younger age are at risk of many obstetrical problems such as cephalopelvic disproportion because the pelvic bones of teenagers are usually not adequately developed, leading to difficult labor necessitating delivery by caesarean section. There is an increased risk of anemia due to poor eating habits, as examples.³ Teenage pregnancy violates almost all the rights (food, shelter, education, health care, and security) of girls with life threatening consequences in sexual reproductive health and this leads to high health service costs to the community as well as to the country in which they live.

Teenage pregnancy promotes unemployment and poverty, and the babies born from teenage

pregnancies are usually uncared for, thus perpetuating the cycle of poverty.¹

Teenagers also have different developmental challenges. Individual differences determine how teenagers will respond to the changes associated with the stage of development and how it is going to affect them emotionally.⁴ In this stage, teenagers like to experiment. Peer pressure is also a problem to teenagers and wanting to 'belong', exposes some to early exposure to sexual activities at the age of 18.5 years.⁵ Early exposure to sexual activities places them at risk of falling pregnant as well as contracting sexually transmitted infections like Human Immunodeficiency Virus (HIV).

This has both economic and social implications for the teenager because she will have to stay at home to raise a child, the father, who may be a teenager as well, might be unable to support the mother and the child financially which leaves them to a future of low socioeconomic status.⁴

Teenagers who get pregnant are subject to social disadvantages due to gender based discrimination and violence as well as limited growth opportunities in education, employment, and marriage.⁶ The study therefore seeks to answer the question: What are the factors contributing to teenage pregnancy as perceived by teenagers in the Emmanuel Health Center catchment area?

BACKGROUND

Over the past years, the global prevalence of pregnancies among young girls has slightly decreased by 14% from 23% to 20.1%.¹ All the regions with the exception of Latin America and the Caribbean appear to be moving towards a decline. Eastern Europe and Central and South Asia have experienced the target declines at 20% followed by East Asia and the Pacific at 13%. Unfortunately, the overall levels in Sub-Saharan Africa, the Arab States, Latin America, and the Caribbean have remained relatively constant with changes of less than 10%.¹ Despite some progress towards reducing pregnancy among teenagers, like the establishment of adolescent health corner, where teenagers can access health care services like HIV counseling, giving information regarding contraceptive use and issuing of contraception as well as other medical services, the discrepancy between Sub-Saharan Africa more especially the West and Central Africa and other regions has grown.⁷

According to the South African Demographic Health Survey (SADHS),⁸ about 16% of women aged 15-19 years have begun childbearing, 12% gave birth and another 3% were pregnant with their first child at the time of the survey. According to the survey, children born to very young mothers are at risk of sickness and death. Teenage mothers are more likely to experience adverse pregnancy outcomes and are more vulnerable than young women who delay childbearing.⁸ According to UNFPA⁹, teenage pregnancy in Lesotho is estimated at 52.1% and contributes to the risk of maternal deaths as pregnancy during this period is associated with a high risk for prolonged labor, pregnancy induced hypertension, obstructed labor, and unsafe abortion.⁸ Childbearing starts early at 13- 19 years in Lesotho. It is estimated that 20% of teenagers aged 15-19 years have had at least one birth or are pregnant with their first child.¹³

Lesotho Planned Parenthood Association (LPPA),¹⁰ indicated that there is high sexual activity among teenagers of both sexes at 16.3%. LDHS⁵ reported that in Lesotho, 19% of teenagers aged 15-19 have begun childbearing, 15% have given birth and an additional 4% are pregnant with their first child. The percentage of teenagers who had children or who were pregnant was 20% in 2004 and in 2009 whilst in 2014 it was a bit lower at 19%, which is still high.⁵

Teenagers in rural areas are more likely to begin childbearing than their urban peers- thus, 23% of rural teenagers have had a live birth or are pregnant as compared with 12% of urban teenagers.¹¹ Some districts had much higher rates of teenage pregnancy than others.¹¹ It was also reported that childbearing was less common among teenagers from the more affluent households⁸. Teenagers from poor families started childbearing at the age of 19 which is five times high at 25% in comparison with teenagers from wealthy families at 6% thus showing that poverty is one of the factors that contribute to teenage pregnancy.¹⁰

A 2017 report by the United Nations Education, Scientific and Cultural Organization (UNESCO)¹² listed Lesotho among the leading countries on early and unintended pregnancies. Six out of 10 girls (60%) aged 15 to 19 are mothers or pregnant with their first child due to unintended pregnancy, which places Lesotho second to Namibia (seven out of 10 girls) for high rates of unintended pregnancies among the East and Southern African countries, the report stated. Recently, UNFPA¹³ stated that teenage pregnancy remains a challenge in Lesotho. The adolescent birth rate is high, at 94 per 1,000 girls aged 15-19 (2003-2018). Therefore, this study envisaged to identify the factors that contribute to teenage pregnancy in Emmanuel Health Center in Leribe, with the ultimate goal of informing strategies to address teenage pregnancy in similar contexts.

MATERIALS AND METHODS

The researchers adopted a cross-sectional descriptive quantitative research design. The study was conducted at Emmanuel Health Center, a subsidiary of Maluti Seventh Day Adventist Hospital following an ethical clearance by the National University of Lesotho Ethics Committee (NULStud-08/18) and the Ministry of Health (ID 12-2018). The Health Center serves a

population of about 26 194. It serves 68 villages in its catchment area. It has previously been reported that it serves many teenagers hence the researchers developed an interest to conduct a study of this nature in this setting. The study participants were teenagers aged 16–19 years who were pregnant and those who were not pregnant at the time of the interview. Non-probability convenient sampling was used to recruit a total of 50 teenagers; 8 pregnant and 42 non-pregnant. All of them were recruited by the first researcher (MEM). Each day, MEM proceeded from the Health Center to the homes of Village Health Workers (VHWs) who guided her to the households where the study participants live.

Participants were first identified by probing their pregnancy status. The parents/guardians of participants were first informed of the purpose of the study and then asked for permission to interview the girls. The confidentiality of information was guaranteed by using codes instead of names. Furthermore, interviews of respondents were conducted in places with no interference from other people. The informed consent document was read to parents/guardians and signed by both after the agreement. Similarly, informed consent was sought from the teenagers. The teenage girls who declined to participate were excluded and another household was selected. The study excluded those who did not fall within this age group, those who were not at home, and those who were too ill or did not consent to participate in the study. The data collection tool development preceded data collection, and the development of the questionnaire was informed by an in-depth literature review and adaptation of related questions from previous studies related to teenage pregnancy.^{19,21,27,32,35,36,37}

The questionnaire was designed in English language and later translated into the Sesotho language. Data collection was conducted for a total of 10 days in the month of April 2018. SPSS Statistics 21.0 was used for analysis. Descriptive characteristics of participants were presented as frequencies and percentages.

RESULTS

The participants lived in one geographical area that is the Emmanuel Health Center catchment area were all in their high school studies. The

age-related data on 50 teenage girls were analysed as presented in *Table 1*. The table shows the highest number of respondents, 17 (34%), were aged 16 years while the lowest number 8 (16%) were aged 17 years. With regards to factors perceived to contribute to teenage pregnancy, the results indicate that 26 (52%) teenagers strongly agreed and 19 (38%) agreed that poverty is one of the contributing factors as opposed to 5 (10%) who strongly disagreed that poverty can lead to teenage pregnancy. Therefore, most teenagers agreed that poverty is one of the factors contributing to pregnancy.

Table 1: Age of Participants

Age	Number (n)	Percentage (%)
16	17	34
17	8	16
18	13	26
19	12	24

Of all respondents, the majority disagree that home conditions can be a contributing factor, while the remaining fraction agrees that home conditions can contribute to teenage pregnancy. From *Table 2*, it is evident that most teenagers do not agree with the notion that home conditions of teenagers can contribute to teenage pregnancy. Among the interviewed teenagers, most of them agreed that coming from a low socio-economic family can contribute to teenage pregnancy.

When coming to media, responses from teenagers on whether media can contribute to teenage pregnancy showed that most teenagers agreed while few strongly disagree (*Table 2*). Furthermore, *Table 2* shows that most of the teenagers surveyed agree that teenagers do intend to get pregnant. Information regarding pregnancy complications is another factor that was investigated, and according to *Table 2* many teenagers strongly agreed and agreed that lack of information regarding pregnancy complications do contribute to the increased incidence of teenage pregnancy, a small portion disagreed.

Responses regarding gender power imbalances of teenage pregnancy showed that most of respondents strongly agree and 12 (24%) agree whilst fewer percentages disagree on the fact that gender power imbalance is one of the factors contributing to teenage pregnancy.

Table 2: Factors Contributing to Teenage Pregnancy

Variable	Strongly Agree N (%)	Agree N (%)	Undecided N (%)	Disagree N (%)	Strongly disagree N (%)
Poverty	26 (52%)	19 (38%)	0 (0%)	0 (0%)	5 (10%)
Home condition	3 (6%)	0 (0%)	7 (14%)	32 (64%)	8 (16%)
Staying in the rural area	5 (10%)	22 (44%)	4 (8%)	13 (26%)	6 (12%)
Media	7 (14%)	20 (40%)	8 (16%)	11 (22%)	4 (8%)
Intend to get pregnant	11 (22%)	28 (56%)	1 (2%)	6 (12%)	4 (8%)
Pregnancy complications	27 (54%)	17 (34%)	3 (6%)	2 (4%)	1 (2%)
Gender power imbalances	33 (66%)	12 (24%)	0 (0%)	3 (6%)	2 (4%)
Low education/schooling	11 (22%)	14 (28%)	1 (2%)	16 (32%)	8 (16%)
Sexual abuse	32 (64%)	16 (32%)	0 (0%)	1 (2%)	1 (2%)
Cultural factors	5 (10%)	19 (38%)	5 (10%)	14 (28%)	7 (14%)
Early independence	40 (80%)	8 (16%)	1 (2%)	1 (2%)	0 (0%)
Peer influences	38 (76%)	8 (16%)	1 (2%)	2 (4%)	1 (2%)
Alcohol and drug abuse	40 (80%)	10 (20%)	0 (0%)	0 (0%)	0 (0%)

Table 2 further shows that those who disagreed were more than the rest, while the smallest percentage had no view on whether low education standards can contribute to teenage pregnancy or not. Participants' views were evenly distributed on whether or not a low level of education contributes to teenage pregnancy.

Sexual abuse is also regarded as a factor contributing to teenage pregnancy. From this study, 32 (64%) and 16 (32%) strongly agree and agree respectively, while few participants were in the categories that disagree and strongly disagree that sexual abuse is one of the factors contributing to teenage pregnancy.

Cultural factors were also investigated and the study participants responded as indicated in Table 2. Results in Table 2 above further show that the majority of the participants strongly agreed that early independence is a factor, and 1 (2%) was not sure whether early independence is a factor or not.

This means that the early independence of teenage girls immensely contributes to teenage pregnancy. Table 2 above has the following results with regard to peer influences: 38 (76%) strongly agree, 8 (16%) agree, 2 (4%) disagree, 1 (2%) strongly disagree, and 1 (%) undecided that peer influence contributes to teenage pregnancy.

Many teenagers however agreed that peer pressure plays a major role in teenage pregnancy. Drug use and alcohol abuse were considered the main contributing factors to teenage pregnancy as 40 (80%) strongly agree and 10 (20%) agree that alcohol and drug use immensely contribute to teenage pregnancy. 100% of the teenagers surveyed agree that

alcohol and drugs contribute to the increased incidence of teenage pregnancy.

DISCUSSION

This study described the demographic, familial, behavioral, and social factors associated with pregnancy among teenage girls aged 16–19 years as perceived by teenagers in a selected Health Center in Lesotho.

Data analysis indicated that all variables except family condition were associated with teenage pregnancy by the participants. The results of this study show that demographic factors such as living in rural areas and level of education are considered contributing factors and familial factors such as family conditions as non-contributing factors.

The results show that living in rural areas is a demographic factor that can contribute to teenage pregnancy. This is so because the majority of the participants agreed to it as a factor. These findings are consistent with the previous studies in Uganda¹⁴, Ethiopia¹⁵, and Nepal¹⁶. Being young and living in rural areas may expose girls to early pregnancy due to: lack of information, peer influence and sexual abuse.¹⁰ Majority of teenagers surveyed disagreed that a teenager born from a teenage mother can also become pregnant while still a teenager. The findings are inconsistent with those of Benzuidenhout¹⁷ who reported that a family history of illegitimacy places a teenager at risk of becoming pregnant.

In line with other studies^{18–20}, the study revealed that these teenagers believed that a low level of education of teenagers coupled with a lack of information about secondary sexual

characteristics, their significance, lack of information regarding complications of pregnancy and labor as well as media influences can lead to teenage pregnancy.

The participants believe that this situation could put them at a higher risk of not only becoming pregnant but contracting sexually transmitted infections (STI). They however trust that being in school may provide periods of supervision and guidance of teenage girls by teachers as well as parents, which could reduce opportunities for sexual activity²¹.

Nowadays, schools do provide some information as most of them said not schooling is a factor, meaning they may obtain sex education from the school, but, looking at the statistics, the information is not enough because teenagers still continue to fall pregnant.¹⁰ The findings of this study agree with what is in the literature as Benzuidenhout¹⁷, the participants purported that media plays a big role in contributing to teenage pregnancy as it influences teenagers on how to be intimate.

The results of analysis on social factors that participants considered to be contributing to teenage pregnancy; revealed that peer influences or pressure; sexual abuse, gender power imbalances, early independence and alcohol and drug abuse were factors contributing to teenage pregnancy. These results concur with some studies that have postulated that sexual abuse places girls at higher risk of experiencing teenage pregnancy.²²⁻²⁴

Whereas, some researchers attribute the link between sexual abuse and teenage pregnancy to the adolescents' behaviours²⁴, others maintain that existing evidence is still not conclusive²⁵. Research supports the widespread idea that peers play an important role in teenage lives; teenagers with sexually active friends are more likely to have sex themselves.²⁶ Peers can influence the views of their age groups, hence, bad influence leads to risky behaviors such as unprotected sexual activity which may lead to pregnancy.²⁷

Monstroon²⁸ postulated that alcohol and drug abuse by teenagers is one of the causes of teenage pregnancy. This also is in agreement with the current study as it is identified by the majority of the teenagers surveyed as a

contributing factor to teenage pregnancy. Tsebe²⁹ also claimed and agreed with the view of the majority of teenagers in this study that gender power imbalances still exist; men still have power over women including girls, teenage girls are intimidated by the men to have unprotected sex and end up with unwanted pregnancy at their tender age.

Early independence was also identified by the majority of the teenagers we surveyed as a contributing factor to teenage pregnancy. Carrera³⁰ also observed that unrestricted interaction with the opposite sex ignite the sparks of lust in teenagers very easily, especially when alcohol and drugs are involved. Benzuidenhout¹⁷ also agrees that early independence of teenage girls do lead to teenage pregnancy.

Poverty as a socio-economic factor was also identified by the participants as a factor that contributes to teenage pregnancy in this study. This finding agrees with the observations by Joubert³¹ that the current economic challenges in developing nations means that those who live in poverty are often exposed to more "live" sexual activity because families are required to live in small houses where there is distinct lack of privacy for the parents.

Children who grow up in such homes can easily engage themselves in sexual activity as soon as they are at the puberty stage. Coley and Chase³² stated that girls living in poor socio-economic background with an early onset of menarche will engage in early sexual behavior.

For the Allan Guttmacher Institute³³, adolescent youths who fall pregnant are more likely to come from low socio-economic status homes. Lastly, culture was identified by the participants as a contributing factor as well. The findings do not differ to those of Mkwana³⁴ who showed that culture can be one of the factors contributing to teenage pregnancy.

CONCLUSION

Based on these study findings, the researchers conclude that the following are some of the factors that contribute to teenage pregnancy as perceived by teenagers in this selected health center in Lesotho: poor socio-economic background, as some teenagers are exposed to sexual activities because their parents or

guardians are failing to take care of them, peer influence or pressure in that some teenagers are

being influenced by fellow friends, some who may be of the opposite sex, and lack of sex education is also a factor. This is so because majority of the teenagers are not receiving any education about sex, sexuality and consequences of teenage pregnancies.

Gender power imbalances: low self-esteem among female teenagers is also exposing them to sexual intercourse which leads to teenage pregnancy. The findings of this study can be utilized to inform the development of strategies to improve adolescent sexual and health services in low income settings.

LIMITATIONS

This study was limited to teenagers living in the 68 villages in the Emmanuel Health Center catchment area and a small sample was used, therefore it makes it difficult to determine if this outcome is a true finding.

AUTHORS' CONTRIBUTIONS

MEM participated in the conception and design, analysis, drafting and revising of the first manuscript. SZM participated in the interpretation, corrections and revising of the manuscript. All authors participated sufficiently in the work and take responsibility for the appropriate portions of the content. All authors reviewed and approved the final manuscript.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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Food Consumption among Men and Women in Lesotho: A Qualitative Study

Mamotsamai Ranneileng PhD, MA

Specialist in Health Promotion and Nutrition, Faculty of Health Sciences, National University of Lesotho, Roma, Lesotho

Corresponding author: mranneileng@gmail.com / mranneileng@yahoo.co.uk

ABSTRACT

BACKGROUND: Nutrition-related initiatives have been undertaken by the Government of Lesotho and non-Governmental organizations operating in Lesotho. However, there is scanty information about what Basotho living in the urban and rural areas of Lesotho really eat. This understanding could be a gateway towards developing programmes geared at reducing the persistent malnutrition in the Country. The aim of this study was to assess the types of foods and food consumption among the adult men and women living in urban and rural areas in Lesotho in order to inform development of food based dietary guidelines (FBDGL) for Lesotho as a nutrition education tool.

METHODS: The study population was the adult Basotho women and men aged 19-65 years living in urban and rural areas of Maseru and Botha-Bothe districts. This study used qualitative methodology to assess nutrition-related knowledge and practices among the adult men and women. Data was collected through focus group discussions (FGDs) and individual interviews using a semi-structured interview guide. The South African Food Based dietary guidelines (SAFBDG) and Food Guide Pyramid (FGP) were used as a framework for the interview guide.

RESULTS: The study produced consistent evidence that the main dish for most Basotho was *papa* with *moroho* with negligible variety; and *leqebekoane*. The participants ate to satisfy hunger; therefore they ate when they were hungry as well as gave children food when they were hungry, which means that they did not plan their meals. The participants reported consuming a wide range of foods at any one point in time, whether it was daily, regularly or once in a while. Most of the urban dwellers consumed a lot of street foods, and men in particular favoured barbecue (braai) meat with *papa*, *moroho*; and salads where possible.

CONCLUSION: The study has established the types of foods consumed by Basotho and has attempted to capture the socio-demographic perspectives regarding food and eating among people living in both the urban and rural areas of the Country. Results show that save for food poverty, if reorganized, and nutrition education provided, the foods can be consumed in adequate daily and weekly amounts. This makes a case for the development of food based dietary guidelines as a nutrition education tool for Lesotho.

INTRODUCTION

To date, several nutrition-related initiatives have been undertaken in Lesotho. International organizations in the Country, namely, The World Food Programme (WFP), Food and Agricultural Organisation (FAO), United Nations Children's Fund (UNICEF) and the World Health Organisation (WHO) have driven very good nutrition initiatives, showing a significant thought regarding nutritional needs of disadvantaged areas and groups in the

Country, and a lot of good work is presently ongoing. In addition to these, Non-Governmental Organizations (including World Vision, Red Cross, Catholic Relief Services (CRS) and CARE Lesotho among others) have also implemented very useful nutrition support programmes in the Country. Whilst the international organisations' programmes show some level of

comprehensiveness, and despite the Country adopting the Primary Health Care (PHC) strategy for health for all (WHO, 1978), curative services are still the main focus of national health and nutrition services. There is still a tendency towards intensifying more curative than preventive services at all levels. Immunisation campaigns, food aid, provision of therapeutic foods and micronutrients as well as nutritional status monitoring equipment are all welcome initiatives; however, they have the characteristics of curative programmes, lacking in concept and thought regarding reorientation of services towards more preventive strategies. Training has been mostly provided to clinical practitioners to the exclusion of community workers including health promotion and nutrition educators. Consequently, the food consumption of the communities remains uninformed and inadequate. In particular, the persistent malnutrition outlined in the Lesotho Demographic and Health Survey (2014)¹ and several other nutrition documents including the Lesotho Nutrition Policy of 2017² and others, indicate a gap between the interventions and the real needs of the communities. These initiatives are however, evidence of a significant shift towards increasing community awareness about the importance of good nutrition. The gap may be widened by the fact that these programmes at both the overall strategic and service delivery level, remain fragmented and ad-hoc as organisations work in silos and are focused on single interventions. Nutritional programmes and initiatives have been mostly run from a limited information base and understanding of what people in Lesotho really eat, and how these foods can be organized into useful guides towards eating accordingly to health promotion guidelines. These limitations are aggravated by inadequate nutrition studies in the Country, which limit available reference data to an almost subjective level. As a result, nutrition programmes have been run without a clear set of guiding principles to direct policy and practice, therefore consequently operating in a vacuum. Hopefully, the newly developed nutrition policy should partly fill this gap. Most importantly, these initiatives have been lacking in continuity and none have provided, among others, nutrition guidelines

that are relevant to the unique situation of individuals and groups in Lesotho.

The study further notes the commendable efforts in recent years towards improving nutrition in the country. This shift is evidenced by the tangible nutrition actions, for example, developing a nutrition strategy³ for Lesotho by the Food and Nutrition Coordinating Office, with financial and technical support from FAO and UNICEF Lesotho. These efforts, coupled with His Majesty the King's position as the Nutrition Champion in Africa (launched in 2015) have put nutrition in the lips of policy makers and hopefully will translate into action and trickle down to the communities where need develops.

In view of these, the present study intends to contribute to bridging the gap between interventions by determining a baseline information about food consumption among adult men and women in selected urban and rural areas of Lesotho and ultimately use this information to formulate food based dietary guidelines for Lesotho (FBDGL).

In order to achieve these goals, the present study assessed women's and men's food consumption and the foods they usually ate.

METHODS

This study used area sampling where participants were recruited according to their geographic area of residence (*area sampling is a form of cluster sampling according to geographic area, mostly used in agricultural research*).³ Stratification of areas started by selecting the two districts, Maseru and Botha-Bothe out of the ten districts of Lesotho. The two districts were chosen for their varied representation of urban and rural areas. A list of villages in both districts was obtained from the Bureau of Statistics Lesotho. Accessible villages were confirmed with the chiefs, and a new list was manually formed by the researchers. A sampling frame was then drawn in clusters of four villages from which every 4th village was randomly selected until the sixteenth village was selected. Eight villages each from the urban and rural areas of both Maseru and Botha-Bothe districts were included in the study. The chiefs of the selected villages were each asked to call a *pitso* (*community*

gathering) on the agreed dates after they were given information about the study. Participants meeting the inclusion criteria were further recruited on voluntary basis. Those who volunteered to participate were invited to sign consent forms and join the focus groups. The following is the breakdown of the participants according to their villages and socio demographic distribution.

DESIGN AND DATA COLLECTION

Qualitative research methodology was used to assess the types of food and food consumption among adult men and women living in urban and rural areas of Maseru and Botha-Bothe districts. Data was collected through focus group discussions (FGDs) and individual interviews using a semi-structured interview guide. The South African Food Based Dietary Guidelines (SAFBDG) and Food Guide Pyramid (FGP) were used as a framework for the interview guide. Sixteen FGDs consisting of an average of 8 participants each were held and 20 people were interviewed individually. A total of 187 participants were assessed. The interviews were tape recorded with the permission of the participants.

Table 1: Socio-demographic Characteristics

Sample	Maseru	Botha-Bothe
Urban villages	3	3
Rural villages	5	5
Focus groups	8	8
Individual interviews	10	10
Unemployed and employed manual workers - men	42	34
Unemployed and employed manual workers – women	31	29
Employed white collar workers – men	9	
Employed white collar workers – women	11	5

ANALYSIS

Data was analyzed using transcripts from the tape recorded interviews and field notes from the

moderator and assistant moderator. Raw data were assembled. This included the exact statements made by the participants in response to each question. The questions, which were premised on the SAFBDG and FGP were used as categories for analysis. The responses were to some extent, analyzed according to the sociodemographic profiles of the participants.

FUNDING

The study was funded by the National University of Lesotho

ETHICAL CONSIDERATIONS

Before the commencement of the study, approval was obtained from the Institutional Review Board of the Faculty of Health Sciences at the National University of Lesotho and the Ministry of Health. The nature of all the procedures followed and employed in the study were disclosed in an information document shared with both the Ethics Committee, the chiefs and the participants. The participants were informed about how they were going to be involved in the study and what would be expected of them. The participants were further informed that the study bore no potential risks to them. The participants gave their informed consent by signing consent forms.

RESULTS

Integrated analysis of focus groups and individual interviews was made and was considered by category in the order used from the questionnaire. Where necessary, the analysis was further divided by gender and socio-economic group.

Describe your usual food intake in the grains group (*papa* [stiff maize meal], bread, cereals, rice, pasta) and other grain products. The participants reported that ... “*we usually eat papa made from chai, moratuo, letlotlo, moja, itau, blue bird and sechaba super maize meals as well as home-made (hammer mills) maize meal...*” Participants also indicated that they consumed brown bread bought and home-made (*leqebekoane*) and very seldom consumed white bread. They reported consuming sorghum soft porridge (*lesheleshele*), fermented sorghum soft porridge (*motoho*) and the less popularly fermented maize meal soft porridge (*mahleu*), and

to a lesser extent samp and pasta. They reported sometimes consuming the following foods: popped corn, *papa* made from corn (sorghum), cooked corn or maize and wheat grains, cereals, and corn on the cob (*poone ea lehoetla*). Moreover, participants indicated that they consumed fat cakes (*makoanya*), potato chips, pancakes, muffins, cookies, cakes, and biscuits. The foods in this group were reportedly consumed by all the socio-demographic groups. The white collar participants reported eating less of the traditional foods including maize cooked and roasted (*sebera*), roasted maize (*machechisa*), remnants from making traditional beer (*joala*) (*moroko*, *setoto*); but ate more of the mixed dishes including sandwich, pizza, and pies.

Describe the nutrients you get from these foods?

The participants reported that they got energy from eating all these foods. However, the blue-collar groups reported that the energy value of rice was low in comparison with *papa*.

How many times per day do you consume these foods? The blue-collar groups reported consuming some of these foods when they were hungry or when they craved them, as well as gave children food when they were hungry. Interestingly, most of these participants, especially women, reported that they ate *papa* and *moroho* every day, no matter the time of day. Foods reported to be eaten in the morning by all the groups ranged from *lesheleshele*, bread and tea, *papa* with milk, and *motoho*. The white-collar groups, men and women further reported eating cereal with milk in the morning; *papa*, rice, pasta, or samp for lunch and supper.

How much of these foods do you eat per day?

"...the portions of papa can be this big (making a gesture with the hands), really big...with a small portion(s) of moroho/ beans, meat, or any relish that is available...", reported the blue collar groups. *"...we never really count or measure how much of anything we eat..."*, reported the white collar, urban participants. The number of servings so, could not be established.

Describe your usual food intake in the vegetables group? *"...we eat moroho (cooked green leafy vegetables)"* including spinach, pumpkin leaves

mostly mixed with baby marrows [*lepu*]), pumpkin, turnip, cabbage, lettuce, Chinese cabbage", reported all the groups" and some indigenous food plants including *"... tenane, bobatsi, leharasoane, semetsing, papasane, sentlhokojane, leshoabe, qhela, fukuthoane, mankiling and moetse-oa-pere..."* reported some older blue-collar participants.... *"We consume potatoes, tomatoes, beans, peas, lentils, onions, beetroot, carrots and mixed vegetables..."* all the participants indicated. The older participants from the rural areas further reported, *"...we also consume senkhoane (made from unripe sorghum), mixed dishes including cooked corn, maize and wheat mixed with beans, and senyaka-mahloana (a mixture of unripe corn and vegetables)." These last dishes are mixed dishes which contain both grains and vegetables.*

How many times per day do you eat these foods?

Participants from the rural areas reported, *"...we eat when we are hungry..."* and all participants from the urban areas, particularly those who were employed, reported that they ate vegetables at lunch and supper.

How much of these foods do you eat per day?

"...vegetables are scarce in the winter seasons... we eat them in very small amounts.... accompanied by large portions of papa in order to fill the stomach..." According to the participants, eating vegetables any number of times did not necessarily mean different types of vegetables or the recommended size of portions. It meant that the participants ate *papa* and *moroho* only or two types of salad (usually carrots and beetroot, or coleslaw, potato salad). The white collar urban dwellers, also included green salad made of lettuce, cucumber and green peppers in those many number of times.

Describe your usual food intake in the fruit group?

The participants from the rural areas reported that they once in a while consumed apples, oranges, peaches, apricots, bananas, pears and water melons, and to a lesser extent quince, pickle pear, pineapples, plums, strawberries and some wild growing fruits including *moroboi, liponaponana, limomonane, lints'o-nts'o, monokots'oai* (wild growing strawberries). The participants indicated that they only consumed these fruits when they

were in season. *"We eat them when they are available...when we have some money to buy them...some of these fruits we grow in our gardens..."* The urban dwellers blue collar workers reported consuming these fruits sometimes, while the white-collar workers reported consuming these fruits (imported) regularly whether in or out of season.

How many fruits do you eat per day? Unlike other foods, all the participants reported consuming some fruits like peaches all day long when they were in season.

Describe your usual intake and the types of meat and other foods in the group (meat, poultry, fish, legumes, eggs and nuts) you usually eat? In response the participants reported: *"...we consume eggs, chicken, pork... that we rear for domestic use and sometimes for commercial purposes..."* All the participants reported that they mostly consumed processed chicken (braai pack). The blue-collar participants living in urban areas reported that they usually consumed dried beans interchangeably with *moroho*, tinned fish, peas and lentils. Nuts were only reported by the participants living in urban areas. In addition, the latter indicated consuming processed foods, *"...we also eat sausages (wors), polony, viennas ...soup packs."* Red meat from lamb, and beef were reported to be consumed much less due to cost *"...it's a delicacy, we eat them only in funerals and feasts"* the participants from the rural areas reported, *"...we consume, donkey, horse, rabbit, rat and cat meat."* All the participants reported: *"we eat tinned beef, baked beans, chicken feet... cow, sheep, goat and pig feet (litlhakoana) as well as heads of these, ...we consume offal, mince- meat ostrich and turkey..."*

How many times per day do you eat these foods? The young single women and men, urban dwellers reported consuming eggs almost daily: *"...I could eat 4 eggs per day for breakfast and dinner..."* and others ate them once or twice in a week, while the rural dwellers reported eating them once in a while. The white-collar men and women reported consuming eggs every day for breakfast. The white-collar men further reported: *"...we eat barbecue for lunch (meat roasted on open fire with papa); ...we*

eat cooked or roasted meat (chicken, lamb, pork) with papa and moroho and other salads when available." The white-collar women also sometimes ate these foods. These participants reported also eating out at restaurants or food outlets like Pick'nPay, Shoprite, KFC, Steers, as well as consumed pizza, meat pies, and Chinese stews. The blue-collar workers in urban areas reported that they bought and consumed leftover gravies from meat stews and soup packs (which they called *tulape*). Many of the participants reported consuming street foods from markets or some other places.

Describe the types of foods you usually consume from the Milk, Cheese, and Yoghurt group? The participants indicated: *"...we eat milk, fresh from the cow, long life milk (referring to any brand of processed milk bought from the shops), sour milk, and lehala (soft porridge cooked with milk)."*

How many times do you consume these foods per day? *"We consume these at the most one or two times a week, when available, once in a while, once a week or month, or when we crave them..."*, the participants reported. Some of the participants from rural areas indicated that they never consumed cheese or yogurt or pudding. The white-collar participants reported eating these foods almost on a daily basis. The women especially ate milk with cereal most mornings.

Describe the foods you usually consume in the fats, oils, and sweets group. Participants reported: *"...we use sunflower cooking oil when preparing moroho and other vegetables, as well as include it in other foods like beans, peas and fry eggs with it..."* The white-collar participants indicated: *"we regularly consume olive and canola oils and we eat avocado...we sometimes consume butter (peanut butter), margarines, (hard or soft), mayonnaise and other salad dressings..."* Interestingly, the blue-collar participants also reported *"... we sometimes buy pork and beef fat from South Africa and use it to prepare food.... We consume ... chocolate and cream...we regularly consume gravy, and tomato sauce..."* The participants further indicated. *"...we do not remove fat from meat or chicken skin before or after cooking..."*. *"The skin is where I enjoy the chicken most"* one participant said. *"...and we*

sometimes add butter, fats/oils to meat when cooking." In addition, the participants reported that they consumed full cream milk and products. *"... I love milk so much, please don't make me eat that water diluted milk that is said to be healthy,"* reported one white collar participant. Some white-collar participants reported consuming low fat and fat free milk daily. In addition, the participants indicated that they consumed sugar every day, *"...in tea, sorghum soft and sour porridge ... when preparing pumpkin and beetroot salads."* On the other hand, participants reported that they seldom consumed foods high in sugar including jam, jelly, cakes, doughnuts, desserts and honey. However, *...we consume cookies (likoankoara), fat cakes (makoenya)... soft (fizzy) and fruit drinks and candy throughout the day ..."*

Do you put salt in food when cooking and when eating? The participants reported preparing foods with salt when cooking and sometimes at table *"...we are told not to consume uncooked salt because it is dangerous to our health..."*

Describe the snacks you usually eat: The participants reported that they usually consumed *"... simba chips (crisps), candy, cookies, biscuits..."* as snacks. However, these were considered delicacies as they needed money to buy. The participants living in the rural areas reported that they usually drank *motoho* throughout the day when they were hungry or thirsty.

Describe your usual water intake: Participants reportedly drank water every day. However, *"... we do not count how much water we drink..."* When asked how much water they had drunk that day the majority of the participants had not, neither could they remember how much water they drank the previous day, or if they drank water at all. However, there were many participants who reported, *"we...drink water when thirsty."*

DISCUSSION

According to the results, the types of foods consumed by the participants were mostly similar, with a few differences observed between rural and urban dwellers, men and women, blue collar and white-collar participants. Most participants' food consumption was determined by availability rather than nutritional value of the foods, and consisted

mainly of the traditional dish of *papa* with *moroho*; and *legebekoane*. Results further revealed that these foods were still mostly the food of choice for all socio-demographic groups, with the white collar urban dwellers including various salad dishes, meat, eggs and fish to the plate; as well as ate pizza, pie, and other foods sold in food outlets and served in restaurants. Take away foods are usually salty, and lacking in fresh fruits and vegetables. A misconception about uncooked salt being unhealthier than cooked salt abounds, thus making people continue to add a lot of salt to their home cooked dishes.

The study also established that the participants consumed different types of grains, vegetables, fruits, meat, poultry, fish, legumes, and nuts; and ate milk, cheese and yoghurt in varying degrees according to their socio-demographic profiles. Many urban areas workers also consumed street food as well as salty, fatty and sugary snacks. Sources of fat are sunflower, and to a lesser extent, canola and olive oils; fat from meat, poultry and full cream milk.

On the other hand, participants were consuming the better meat options including chicken, fish and the other protein giving foods including eggs, and legumes, the latter consistently portraying the plant-based Basotho diet. However, the participants' diet is composed of high energy from starchy foods and added sugar which they include in soft and sour soft porridges, tea/coffee, as well as fizzy and diluted fruit juices.

The study could not determine if the portion sizes of these foods were adequate, inadequate or excessive. Traditionally Basotho eat when they are hungry and give children food when they are hungry, it is not a question of whether it is breakfast, lunch or dinner; a concept that is foreign to the communities; neither do they weigh nor measure food. Although the participants listed the wild vegetables that they said they usually consumed, studies produced evidence that the introduction of the western style of eating has destroyed the confidence of these people in their own type of food which is known to be highly nutritious as compared to the domesticated plants.⁵ Some of these wild plants like *leshoabe*

and *bobatsi* among others, have even been found to have medicinal properties.^{6,7} Re-establishing and re-cultivating confidence in the already usually consumed healthy foods should be the mainstay of nutrition education interventions.

In view of these revelations, it may be easy for the participants to eat according to the recommendations of the FGP and FBDG since the food is known, and consumed; it just needs to be reorganized, with a few changes to make a health promoting diet.

LIMITATIONS

The urban areas dwellers were hard to gather, especially the white-collar workers and they were mostly interviewed individually using the same interview guide.

CONCLUSION

The study has established the types of foods consumed by Basotho and has attempted to capture the socio-demographic perspectives regarding food and eating among people living in both the urban and rural areas of Lesotho. Results show that save for food poverty, if reorganized, and nutrition education provided, the foods can be consumed in adequate daily and weekly amounts. This makes a case for the development of food based dietary guidelines as a nutrition education tool for Lesotho.

RECOMMENDATIONS

The study recommends that the results be used to inform the development of Food Based Dietary Guidelines for Lesotho.

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Innovations in Medical Education and Clinical Care: Implementing an Essential Newborn Care Course at Motebang Hospital

Jill E Sanders¹, MD; Heidi Hanekamp², MD; Katherine Cummings³, MD; Lyrad Riley², MD

¹ Lesotho Boston Health Alliance, Hlotse, Lesotho

² St Mary's Family Medicine Residency, Grand Junction, Colorado, USA

³ John Hopkins Pediatric Residency, Baltimore, Maryland, USA

Background

Lesotho has high infant and child mortality rates. The Global Burden of Disease, Injuries and Risk Factors 2019 Study noted under 5 years deaths in Lesotho to be 64.4/1000, the highest in southern Africa.¹ The global under 5 years mortality rate is 37.1/1000. Primary causes of infant deaths in Lesotho are prematurity and encephalopathy due to birth asphyxia.² Motebang Hospital is the district hospital of Leribe with an average of 131.4 births each month in 2022.

Description

In October 2022, an Essential Newborn Care, Part 1 training-of-trainers course was conducted at Motebang Hospital. The course and related materials were developed and approved by the American Academy of Pediatrics and the World Health Organization and titled: Essential Newborn Care, Part 1 - Immediate Care and Helping Babies Breathe at Birth.³ The training was facilitated by a Family Medicine specialist and registrar from USA, a pediatrician from Lesotho and pediatric registrar from USA. Lesotho Boston Health Alliance provided the training location, logistical support, and a facilitator. Latter-Day Saints Charities funded the mannequins, training materials, printing costs, and meals for the participants. St Mary's Hospital Foundation provided funding for travel for two of the facilitators and St Mary's Family Medicine

Residency Program provided two of the facilitators. Participants included 1st and 2nd-year Family Medicine registrars, medical interns, and nurse-midwives from Motebang Hospital for a total of 15 participants: 12 doctors and three nurse-midwives. Activities included pre- and post-course knowledge checks and skills assessments, didactic teaching, hands-on practical demonstrations, and objective structured clinical examinations.

Lessons Learned

The course was well received and participants were enthusiastic, with all successfully completing the course. Pre-course and post-course knowledge and skills checks were performed. Although the pre-course knowledge was high, as demonstrated by an average score of 17/20 (85%) correct, there was an improvement. The post-course knowledge score was an average of 19.8/20 (98%) with 13 of 15 participants receiving a perfect score. Facilitators identified ten of the course graduates as having strong teaching and mentoring skills for future training events. As part of the training-of-trainers course, participants developed their future training plans and identified any obstacles to carrying out future training. Mannequins and teaching supplies were distributed to Motebang Hospital in Leribe District, Machabeng Hospital in Qacha's Nek District, and Domiciliary Clinic in Maseru District.

Next Steps

Graduates of the training are tasked with cascading the training to colleagues at their facilities. Follow-up is planned at three and six months after the training to determine reach. Additional evaluation of the quality of care provided and changes in neonatal outcomes are anticipated.

In collaboration with the Ministry of Health, a proposal has been submitted to Latter-Day Saints Charities for additional funding to support national training spanning several years. Future training will focus not only on Helping Babies Breathe at Birth but also on Helping Mothers Survive: Pre-eclampsia and Eclampsia.

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