



# Nutrition And HIV/AIDS: A Qualitative Study on Perceived Factors Affecting Feeding Practices among Adult People Living with HIV/AIDS in Kigali, Rwanda



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## Abstract

**Background:** A bidirectional relationship exists between nutrition and HIV/AIDS. Poor nutrition has been associated with unsuppressed viral loads among People Living with HIV/AIDS (PLWH) while HIV infection leads to poor nutrition. HIV treatment, care and support efforts should thus incorporate nutrition management. Despite the fact that various scholars have researched the dietary status of PLWH, there is paucity of explorative research exploring factors that drive feeding practice among adult PLWH. This study therefore aimed to explore the perceptions of PLWH on factors that affect their feeding practices and ultimately dietary diversity.

**Methods:** Three health facilities were purposively selected as study sites. Interviews were conducted by a trained health professional in a private room at the study sites. Participants were purposively selected for enrolment. Only participants who had recorded a low body mass index (<18.5) were considered for the interview prior to provision of nutrition related routine health education. Sample size was controlled by saturation of information. A pre-tested interview guide was used. The interview guide was developed based on guidelines from WHO and Rwanda National Guidelines for Comprehensive Care of People Living With HIV/AIDS. The conventional content analysis approach was used for the analysis of data.

**Results:** There were three major themes that emerged from data analysis: knowledge on importance of good nutrition in HIV/AIDS, food availability and, habits and family preferences that affect food intake. The feeding habits of the respondents were guided by their nutritional knowledge, availability of food and also by their habits and family preferences.

**Conclusion:** There is need for improved health education for PLWH on nutrition challenges associated with HIV/AIDS. The study further underscores the need for nutrition messages that extend to address habitual and family preferences.

**Keywords:** People living with HIV/AIDS; Nutrition; HIV/AIDS

**Abbreviations:** PLWH: People Living with HIV

## Introduction

In 2016, the United National General Assembly set an ambitious goal to end AIDS epidemic by 2030 [1]. This call has seen many countries, including Rwanda, scaling up interventions that aim to scale up HIV diagnosis, antiretroviral therapy (ART) initiation and care continuum [2]. Not surprisingly, Rwanda has been one of the first countries reported to have reached The Joint United Nations Programme on HIV/AIDS (UNAIDS) 90-90-90 targets [3]. Despite this

remarkable progress, UNAIDS, in 2017, there were 940,000 AIDS related deaths globally [4]. With ART coverage well established in most HIV struck regions, HIV researchers have attributed this mortality to the little focus on nutrition related care for people living with HIV/AIDS (PLWH) [5,6].

A bidirectional relationship exists between nutrition and HIV/AIDS [7-9]. Poor nutrition has been associated with unsuppressed viral loads among PLWH [10], while HIV infection

leads to poor nutrition [11,12]. HIV treatment, care and support efforts should thus incorporate nutrition management. As such, global interest in the concept of improving health outcomes for PLWH through proper nutrition has seen a multi-organizational effort including The U.S. President’s Emergency Plan for AIDS Relief (PEPFAR), WHO, UNAIDS, and the World Food Program (WFP) [13]. As of 2016, UNAIDS reported the heaviest burden of malnutrition to be in sub-Saharan Africa [14]. Studies measuring impact of malnutrition among PLWH have reported prevalence over 20% [8,15]. Such high prevalence is worrisome as poor dietary diversity has been associated with greater morbidity and mortality among PLWH [16,17].

While dietary status of PLWH has been researched elsewhere [18-21] there is paucity of explorative research exploring factors that drive feeding practice among adult PLWH. The purpose of the current study was to explore perceptions of PLWH on factors that affect their feeding practices and ultimately dietary diversity.

**Methods**

**Study setting, sampling and participant enrolment**

Three health facilities were purposively selected as study sites. Interviews were conducted by a trained health professional in a private room at the study sites. Participants were purposively selected for enrolment. Only participants who had recorded a low body mass index (<18.5) were considered for the interview prior to provision of nutrition related routine health education. Sample size was controlled by saturation of information [22].

**Ethical considerations**

Ethical approval was obtained from University Teaching Hospital of Kigali Ethics Committee (Approval number: EC/CHUK/0129/2019). All participants signed informed consent prior to being interviewed.

**Data collection and analysis**

We used a pre-tested interview guide to collect data. The interview guide was developed based on guidelines from WHO [23] and Rwanda National Guidelines for Comprehensive Care of People Living With HIV/AIDS [24]. A survey trained interviewer, GP, conducted the interviews in a private room at the study site. We followed the steps; verbatim transcription, translation, back translation, upload of translated script into NVivo version 12, and reading, coding and narrative presentation of findings. We followed the conventional content analysis approach in analyzing data [25]. With this approach; themes were derived directly from the text data [25].

**Results**

A total of 15 PLWH were recruited. Out of this total, 7 were recruited from University Teaching Hospital of Kigali, 5 from

Kibagabaga Hospital and 3 from Rwanda Military Hospital. Participants were aged between 29 and 52 years. More information on the informants is available on Table 1.

**Table 1:** Presentation of interviewees by age and duration on antiretroviral therapy

Interviewee Number	Age	Duration on Antiretroviral Therapy
PLWH-1	52	3 years
PLWH-2	46	16 years
PLWH-3	49	12 years
PLWH-4	49	14 years
PLWH-5	35	8 years
PLWH-6	41	14 years
PLWH-7	38	2 years
PLWH-8	47	9 years
PLWH-9	39	12 years
PLWH-10	29	2 years
PLWH-11	32	6 years
PLWH-12	36	6 months
PLWH-13	39	1 year
PLWH-14	45	2 years
PLWH-15	32	6 years

**Knowledge on importance of good nutrition for PLWH**

Majority of the interviewees demonstrated good knowledge of the importance on nutrition for PLWH. Counselling sessions at time of ART collection was the most cited source of information. “I know, because we have some food which are important in building our body, for energy and other which protect our body being attacked with some diseases” Source: PLH3 “...for us because of ARVs we need to eat well and even sufficiently. So that you live long, because to take it [ART] without sufficient food intake it not good as well. So we eat the food that contains all nutritive value like meat, milk, eggs, beans, porridge and others” Source: PLWH1

**Food availability**

Theme two revealed a major barrier was food availability. Interviewees expressed cost as a major factor influencing food availability. Some respondents could only afford certain types of food at certain times of the year where they would be plenty and relatively affordable. Meat was discussed as the most challenging food to obtain for most participants. “... I tested positive in 2003. At the time, I was living with my family nearby this health facility. There was not treatment that time but later that is when I started collecting have started my treatment in this facility, then as time goes on, this area become very expensive, and I couldn’t be afford to stay around here that why I shifted to Kagugu. So, if to live [rentals] are expensive, it also affects food...” Source: PLWH 2 “...sadly my

husband passed away, current I am living together with my child, as I said I am not working, therefore to have food is very difficult for us, and end results ARVs affect me in negative way....” Source: PLWH4

### Habits and family preferences

From theme three, participants described how some habits and family preferences affected their feeding practice. Some participants found it difficult to change their feeding routine to incorporate some foods they normally would not take before being diagnosed with HIV. On the other hand, some participants felt their feeding practice was dependent on their family preferences as they would normally find it hard to have two sets of meals prepared; with one to accommodate their needs. “....my wife has diabetes, so we take different food. I mean she prepares the food different from what I need [as an individual living with HIV/AIDS].” Source: PLWH5 “...even before I started taking these pills [ART], fruits were a luxury. I cannot afford to buy fruits so I can consume every day. You can imagine paying 400 Rwandan Francs for one orange. Better I buy one kilogram of Irish potatoes with that money.” Source: PLWH7

### Discussion

The main aim of this study was to explore the perceived factors affecting feeding practices among adult people living with HIV/AIDS in Kigali, Rwanda. Based on the findings of the study, there were three main themes emerged. Most participants had good knowledge on importance of good nutrition in HIV/AIDS or were at least aware of the need for good nutrition when living with HIV/AIDS. Food availability and, habits and family preferences emerged as major factors participants perceived affected their feeding practices. These findings underscore the urgent need for renewed focus on nutrition as one of the main components of a comprehensive package of care for individuals who are living with HIV/AIDS [5,6].

### Knowledge on importance of good nutrition for PLWH

Based on the findings of the current study, participants demonstrated good knowledge on importance of proper nutrition for PLWH. Counseling sessions at time of ART collection was the most cited source of information. The findings of this study corroborate well with the findings of Anand & Puri [26], which noted that PLWH possessed knowledge concerning nutrition. However, the study noted that most of them did not score very high when it comes to the practices section.

The study noted that while the individuals had proper nutritional knowledge, they did not apply them in their daily practices. The findings of a descriptive study, which was done by Young et al. [27] on nutrition-related knowledge, attitude, and practices (KAP) among individuals who live with HIV/

AIDS (PLHIV) in India, demonstrated that while the attitude toward the disease and food was positive, the use of nutritional knowledge was lacking. The findings of the study by Young et al. [27] further noted that the PLWH were having proper knowledge regarding the significance of nutrition during infection.

At the same time, it noted that PLWH had a positive attitude toward the disease as well as the significance of nutrition during the course of the disease. The study further noted that translation of the knowledge into practice was generally low. Therefore, the scholars recommended continuous interventions, which are mainly aimed at behavior change to ensure conversion of the knowledge into healthy dietary practices [27].

This finding points out that knowledge on importance of good nutrition for PLWH is one of the perceived factors, which affects the feeding practices among adult PLWH in Kigali, Rwanda. Good nutritional information for the PLWH plays a key role in improving the overall quality of life of individuals through the provision of the nutrients, which are needed by the body. Besides, it is highly beneficial in keeping individuals' immune system stronger in such a manner that they are capable of fighting diseases. In addition, through the nutritional information, they are in a position to manage HIV symptoms and complications effectively.

As a result, the government of Rwanda through the relevant authorities should ensure that measures are put in place to ensure that PLWH have access to highly credible nutritional information as it is one of the main perceived factors, which affects the feeding practices among adult people living with HIV/AIDS. Greater financial, political, and technical support ought to be provided to ensure that there are improvements in the quality of nutritional information that is conveyed to PLWH.

Nutrition counseling is a key strategy, which can be used by the government of Rwanda in order to disseminate nutritional information. The relevant authorities can ensure that there is adequate allocation of resources to ensure nutritional counseling it carried out in the right manner. Besides, the healthcare providers should enhance nutrition education to PLWH.

### Food availability

From participant responses, an important factor, which affects the feeding practices among adult PLWH in Kigali, is food availability. The findings of the study noted that lack of food is one of the main challenges, which hamper the fight against HIV. Based on the findings of the study, a major concern regarding availability of food was the cost, which is associated with food. The high costs, which are associated with some of the foods hinders some of the PLWH from accessing them. As a result of the costs, affordability of some kinds of foods is not

possible. The findings of the study revealed that meat was the most challenging food to obtain.

The finding of the study is similar to the findings of other studies, which have been carried out by previous scholars. The findings of a number of other studies corroborates well with the findings of the current study. For instance, studies carried out in Mali [28,29], Taiwan [30], Vietnam [31], France [32] and Uganda [33] also concluded that food availability and access is a key factor, which influences the feeding patterns of PLWH. The findings of the study noted that lack of some kinds of foods result in poor dietary practices. A separate study that was done by Young et al. [27] noted that food insecurity is one of the key barriers to adherence to care among PLWH.

Similarly, a study, which was carried out by Weiser et al. [34] also noted that there is an inextricably link between food insecurity and the HIV epidemic. Rodas-Moya [35] also carried out a study on the preferences for food and nutritional supplements among adult PLWH in Malawi. The findings of the study illustrated that food insecurity might contribute to intra-household sharing of various nutritional supplements.

Based on the findings of the study, it can clearly be pointed out that food availability affects the feeding practices among adult people living with HIV/AIDS in Kigali, Rwanda.

As a result, the government and the other relevant authorities ought to ensure that there are different kinds of measures in place to ensure that the challenge of food availability is looked into. One of the main measures, which can be put in place, is the development of various national level strategies, which can ensure that food, assistance as well as nutritional support are integrated into the national strategic plan. In addition, the government ought to ensure that the partners, who are involved in food assistance at the community levels, national levels as well as at international levels, are identified.

They can also ensure that a criteria in which food-assistance is offered is properly defined. The government should also define the standards of nutritional support to be provided to the pregnant women, nursing mothers as well as young children with the aim of ensuring prevention of mother to child transmission. The government should also be involved during the development of national policy to guide the community-based organizations, which are willing to offer nutritional support.

The government also needs to ensure that the healthcare facilities are well equipped with the human resources, infrastructure, as well as the supplies, which are needed. Incorporation of nutritional support into HIV/AIDS care always need workers to ensure distribution of adequate food assistance to community-based organizations, clinics, hospitals and schools among others. The government can also

ensure that there are adequate resources to ensure effective transportation of various food supplies and that there is proper storage for the given supplies.

### Habits and family preferences

Participants highlighted personal habits and family preferences as important factors that affect the feeding practice of PLWH. Based on the findings of the study, a number of the respondents indicated that as a result of HIV, they changed their feeding routine in order to include even foods, which previously they were not taking before being diagnosed with HIV. In addition, there were participants who opined that their feeding practice depended on the preferences of their families.

For instance, some of them previously found it very hard to have two sets of meals prepared; with one to accommodate their needs. The findings of a study that was done by Maertens [36] also noted that one of the main barriers to nutrition management among PLWH is family and personal preference. Based on the findings of the study, most of the patients noted that their attitudes toward changing their diet was brought about by being HIV-positive. At the same time, a number of the participants noted that their preferences for less healthy foods, together with the needs and preferences of their families made management of nutrition to be more challenging on a daily basis. This is similar to the findings of the study, which was carried out by Young et al. [27].

The study therefore notes that the preferences of PLWH for less healthy foods together with their families' needs and preferences make the management of nutrition to be highly challenging. Measures needs to be put into place to ensure that PLWH are trained on specific nutrition management techniques like shopping, cooking and how they can balance food with illness. The government should also be involved during the development of national policy to guide the community-based organizations, which are willing to offer nutritional support.

### Conclusion

In PLWH, good nutrition plays a major role in supporting the overall health besides helping to maintain the immune system. At the same time, good nutrition is also highly beneficial for PLWH to maintain a healthy weight. As a result, HIV treatment, care and support efforts should thus incorporate nutrition management. This was a qualitative study based on the perceived factors affecting feeding practices among adult people living with HIV/AIDS in Kigali, Rwanda. It can be concluded that knowledge on the importance of good nutrition in HIV/AIDS, food availability as well as habits and family preferences are some of the main The study concludes that the major perceived factors, which affects feeding practices among adult people living with HIV/AIDS in Kigali, Rwanda include: knowledge on importance of good nutrition in HIV/



AIDS, food availability and, habits and family preferences that affect food intake. As a result, the relevant authorities should ensure that there are measures in place aimed at ensuring provision of the right information to the PLWH. PLWH should also get information on how they can balance their food habits and preferences with the illness. The government should also be involved during the development of national policy to guide the community-based organizations, which are willing to offer nutritional support.

### Declarations

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### Competing interests

The authors declare that they have no competing interests, which may have inappropriately influenced them in writing this article.

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