

CHALLENGES OF ACCESSING NUTRITION EDUCATION AND COUNSELLING BY PEOPLE LIVING WITH HIV AND AIDS IN LUSAKA DISTRICT ZAMBIA

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ABSTRACT

Nutrition education and counselling are critical components of comprehensive care for people living with HIV (PLWHIV), as they play a pivotal role in improving dietary practices and overall health outcomes.

The purpose of the study was to explore the challenges faced by PLWHIV in accessing nutrition education and counselling. The study used qualitative methodology driven by hermeneutic phenomenological research design. The homogenous purposive sampling technique was used to select participants until saturation of the idea was reached. The sample consists of 25 adults living with HIV and AIDS, aged 20 to 60, receiving health care support at the centre.

Data was collected using semi-structured interviews to describe lived experiences. Data was analysed using thematic analysis by Ajjawi and Higgs (2007) data analysis stages. The study reveals transportation challenges, inadequate time for patient care, and health personnel shortages as significant barriers to accessing healthcare, leading to rushed counselling sessions and limited nutritionist availability. The contribution of the study extended beyond identifying the challenges; it provided actionable recommendations to enhance the accessibility and quality of nutrition education and counselling services.

Ultimately, these measures aim to improve the health and wellbeing of PLWHIV and contribute to better health care outcomes for this vulnerable population.

KEYWORDS

barriers, access, consumer, nutrition education, counselling, people living with HIV (PLWHIV)

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INTRODUCTION

Nutrition education and counselling (NEC) are widely recognised as integral components of comprehensive care for individuals living with

HIV/AIDS (PLWHIV). Nutrition education and counselling are critical components of comprehensive care for people living with HIV (PLWHIV), as they play a pivotal role in improving dietary practices and overall health outcomes (Malama & Ndhlovu, 2019). Proper nutrition can significantly impact the overall health and wellbeing of PLWHIV, helping them manage their condition and improve their quality of life. Nutrition education and counselling serve as essential tools for empowering individuals, families, and communities to make informed choices regarding dietary habits and lifestyles. This guidance not only contributes to their physical health but also has far-reaching effects on their economic and social welfare (Anand & Puri 2019; Bello *et al.* 2019). According to McNulty (2013), nutrition education and counselling have been proven effective in influencing changes in dietary behaviours associated with chronic illnesses. Furthermore, research by Hudayani and Sartika (2016) confirms that nutritional counselling plays a significant role in improving health outcomes for individuals living with HIV and AIDS. Limited availability of nutrition education and counselling, coupled with inadequate knowledge and subpar dietary practices among individuals living with HIV (PLWHIV), could significantly contribute to the accelerated progression of HIV to AIDS (Martinez *et al.*, 2014; Ezenwosu & Ezenwosu, 2023). However, accessing adequate nutrition education and counselling (NEC) presents significant challenges for PLWHIV, particularly in resource-limited settings (Malama & Ndhlovu, 2023). Several factors contribute to these challenges, ranging from systemic barriers within healthcare facilities to individual-level obstacles experienced by patients. Studies conducted in various settings, including Rwanda (Tesfay *et al.*, 2021) and Ethiopia (Ewune *et al.* 2021), highlight the prevalence of limited resources and food insecurity among PLWHIV. Lack of access to nutritious food and feeding

supplements exacerbates the nutritional challenges faced by individuals, hindering their ability to maintain optimal health. Tesfay (2021) indicated in their study that inadequacies in the content, duration, and mode of delivery of nutritional counselling contribute to the challenges faced by PLWHIV. Additionally, healthcare providers may lack refresher training, leading to inconsistencies in the quality of NEC provided to patients.

Despite the recognised importance of nutrition education and counselling (NEC) for people living with HIV/AIDS (PLWHIV), accessing these essential services remains a significant challenge. Multiple barriers exist at both systemic and individual levels, hindering PLWHIV from receiving adequate nutritional support. In Zambia, the Zambian government has implemented several strategies to improve the quality of life for people living with HIV and AIDS (PLWHIV). These include the launch of the first national HIV and AIDS Council Strategic Framework, the implementation of the 2011-2012 framework, and the commencement of National Nutrition Surveillance 2007(MOH 2011, NAC 2009). Nutrition education, counselling, and support are now integrated into HIV services. While these services are deemed important and are generally accessible, several barriers persist, creating obstacles for individuals seeking them.

A study by Malama and Ndhlovu (2023a) recommended that nutrition education and counselling should be integrated into a holistic care approach that considers the physical, emotional, and social well-being of PLWHIV, addressing their multifaceted needs effectively. Despite the acknowledged significance of nutrition education and counselling (NEC) in the comprehensive care of people living with HIV/AIDS (PLWHIV), accessing these services remains challenging. While the Zambian government has integrated

NEC into HIV services and implemented strategies to enhance the quality of life for PLWHIV, barriers persist, hindering individuals from accessing these crucial services. Consequently, understanding the barriers experienced by PLWHIV in accessing NEC is paramount to inform strategies aimed at improving the accessibility and effectiveness of these services.

Using qualitative methodology, the study explores the challenges faced by people living with HIV and AIDS in Lusaka District, Zambia, using qualitative methodology to understand consumer experiences. The study aims to explore how PLWHIV experience barriers when accessing NEC. Through the identification of these challenges, the study aims to provide insights and recommendations for improving the accessibility and effectiveness of NEC services for PLWHIV in Lusaka District. The study was guided by the following objectives:

- 1) To explore the challenges faced by people living with HIV (PLWHIV) in accessing nutrition education and counselling services.
- 2) To elicit recommendations from PLWHIV for improving the accessibility, relevance, and effectiveness of nutrition education and counselling services.

METHODOLOGY

The study was conducted within Lusaka district, Zambia, focusing on the largest healthcare facility in the area. Employing a qualitative research paradigm grounded in hermeneutic phenomenology, the study used a hermeneutics phenomenology research design. The sample consisted of 25 people living with HIV and AIDS between the ages of 20 and 60. Homogeneous purposive sampling was employed to select participants, specifically targeting individuals enrolled in nutrition programmes at healthcare facilities within the district. The study included HIV and

AIDS adults aged 20–60 with an ART treatment duration of over three years. It will exclude HIV-positive people under 20 years old or more than 60 years old, all pregnant and lactating women, and those on TB treatment.

A semi-structured interview guide was employed to gather insights into the challenges facing PLWHIV in accessing nutrition education and counselling (NEC). Semi-structured interviews are suitable to explore the perceptions and opinions of participants and enable probing and clarification of answers. Busetto *et al.* (2020). The interviews were conducted face-to-face with the respondents. Thematic coding of the transcribed data followed the structured approach outlined by Ajjawi and Higgs (2007), encompassing six distinct stages of analysis. Each participant signed an informed consent form before taking part in the study. The study project obtained ethical and administrative authorization from the University of Zambia Ethics Committee in Zambia.

RESULTS

The participants' narratives revealed three prominent themes, highlighting the barriers encountered in accessing nutritional education and counselling. These challenges were categorised into three primary areas: transportation-related difficulties, insufficient time allocated for patient attendance, and a shortage of healthcare personnel. Additionally, participants mentioned a lack of awareness regarding the availability of nutritional services within healthcare facilities, as well as the absence of dedicated nutritional facilities within these centres.

Characteristics of study participants

Overall, 25 PLWHIV participants participated in this study: 14 women and 11 men, ages 20–60, who have been on ARV treatment for at

least 3 years. The participants represent a diverse range of ages, employment statuses, marital statuses, and durations on antiretroviral therapy (ART). The profiles encompass individuals who are self-employed, unemployed, or in formal employment. Notably, some participants have been on ART for several years, with one individual having started ART as early as age 4. These unique profiles contribute to a rich and varied participant pool, offering valuable insights into the experiences of people living with HIV in the context of nutrition counselling and care.

Theme 1: Challenges related to transportation

Transportation emerged as a significant challenge according to participants' responses. Many expressed difficulties in commuting from their residences to the healthcare facility. The following were some of the complaints from the participants' own point of view: *"I can say that really the challenge is the lack of transport to come to the hospital and have a chat with a medical worker"* (Participant 3). *"Making a move from the community to health care is really a challenge, as sometimes I have to walk a long distance to the facility."* (Participant 11). The theme underscores the significant impact of insufficient transportation options on individuals' access to essential medical and nutritional services.

Furthermore, the issue of transportation extends beyond mere inconvenience. It influences patients' overall health outcomes and adherence to treatment regimens. Difficulty in reaching healthcare facilities may result in delayed or missed appointments, which can negatively impact the effectiveness of medical and nutritional interventions. As explained by participant 18 *"I come late and I find the teaching finished. Otherwise, I have not come across any counselling of teaching*

sessions for over 3 years now. They only give us health talks about what to eat". (Participant 18).

The theme highlights how transportation challenges are a significant barrier to accessing healthcare services, reflecting a broader issue of infrastructure inadequacies that affect patient care and health equity.

Theme 2: Inadequate time to attend to too many patients

The study findings revealed that inadequate time was a key concern due to the overwhelming number of patients seeking services compared to the limited availability of healthcare personnel. This situation compelled individuals to wake up at unusual hours in order to secure access to nutrition education and counselling. Furthermore, some participants reported prioritising medical consultations over nutrition counselling due to time constraints. *The challenge is that there are many of us, like me. I came on Tuesday; if I came at 07:00 hours, I would be number 70, so we usually come very early so that you do not spend the whole day here.* (Participant 25). *They give us the same talk, but we have different problems, so they should find a way of helping us individually. And the other thing is that there are some people attending the services there, so they fail to provide adequate counselling because of time. Everyone seems to be rushing.* (Participant 18). *It is easy to access nutrition counselling; however, there is less time taken to be talked to. The nurses have to attend to so many people that come for check-ups and to the pharmacy, and because of this, we leave this place sometimes after 14 hours.* (Participant 14). *It had been a long time since I was counselled by the nutritionist. Every time I came, they asked me to take my weight, and when I went to the desk of the nutritionist, they said I was okay. They pay much attention to those who are very sick and underweight.*

(Participant 3)

In addition, participant 7 and participant 15 shared similar views that stating that “We don’t always pass through the nutritional table because we rush to see the doctor... (Participant 7). “Sometimes we don’t spend quality time with the nutritionist because we are rushing to see the doctor”. (Participant 15)

Another, subtheme that emerged was Limited consultation time due to high patient volume. The participants explained that though nutrition counselling is easily available and accessible, it is mostly done in a hurry. There is usually one nutritionist at the desk. The participants noted with concern that the huge numbers of people coming to the centre create an overwhelming environment for the nutritionist. One participant asserted that: “it’s done in a hurry because sometimes there are many patients and there is only one nutritionist to attend to all of us. You find that nurses become overwhelmed and only focus on people that are sick, while those that look better are hardly attended to (Participant 8).

It is evident from the narratives above that both health personnel and patients lack quality time due to the overwhelming number of patients seeking nutrition education and counselling services.

Theme 3: Inadequate health personnel

Another challenge that emerged from the participants’ own expression was inadequate health personnel to care for a large number of patients seeking nutrition education and counselling services. Participants complained that, in some cases, information is unavailable and they just go without accessing the services. *Another thing is that there are few staff to attend to us quickly, so we spent more time here. These numbers also make the nurses spend more time with those who are unwell or sick than us. Most of the time, I just*

see the doctor to get my medication and go home. (Participant, 25). It’s easy to access, but sometimes we don’t pass through the nutrition table because we patients are told to rush and see the doctor if there are few doctors in the clinic. Sometimes the information is not available due to a lack of health personnel” (Participant 22).

Furthermore, a subset of participants reported not having received individualized nutrition counselling, instead receiving only group-based nutrition education. For instance, Participant 19 noted, “I have never done a one-on-one talk with the nutrition counsellor, I have only had the education as a group, and they taught us what to eat” (Participant 19). Similarly, participants 7 remarked “I have never experienced a one-on-one talk with a nutritionist, only the general teaching, so I do not have any experience with nutrition counselling (participant 7). The observations reveal a gap in personalized nutrition counseling for some individuals, with group-based educational approaches being the preferred method due to inadequate health personnel.

The study also highlighted various challenges patients face in accessing nutrition services. Additional difficulties highlighted include the absence of nutritional tables or desks in certain health centres, as well as a lack of awareness regarding the availability of such facilities within the health centre. Participants noted that not all health centres offer this provision, thereby underscoring the variability in service provision across different healthcare facilities.

The study has established that, though nutritional education and counselling are available and easily accessible, patients do face a number of challenges when accessing these services at health facilities. Other challenges that came out included a lack of nutritional tables or desks in some health

centres and a lack of awareness of the presence of nutritional tables or desks at the health centre. Participants stated that not all health centres have this provision.

Theme 4: Enhanced frequency and availability of nutrition education sessions

Participants recommended the need for more regular nutrition education and counselling sessions for PLWHIV. *“There is a need to have more regular nutrition education and counselling sessions for PLWHIV, and the provision of food is also necessary”* (Participant 24). *“There is also a need for more nutritionists at the nutritionist table for patients to have quality time and get the much-needed information they need”* (Participant 20).

Many participants observed that nutrition counselling sessions were often provided as a single session, often scheduled at the beginning of the program. The frequency of these sessions varied, depending on the timing of visits and individual circumstances. Participant 25 described their experience as: *“I would say frequency depends on the time I came to the centre. I only come here two times a year. But others who have low CD4 come maybe after 2 or 3 months, just like that.”* This highlights the inconsistency in nutrition counselling provision.

This theme emphasises the importance of increasing the frequency of educational sessions to ensure that patients receive consistent and ongoing support in managing their nutrition and health. The study highlights the significant obstacles faced by PLWHIV in accessing nutrition education and counselling services, emphasizing the consumer experience perspective.

Theme 5: Increased staffing and quality time with nutritionists

Participants repeatedly emphasized the

crucial need for more nutritionists in healthcare facilities to improve the quality and effectiveness of counselling sessions. The need for more staff is linked to the desire for extended, meaningful interactions between patients and nutritionists. Participants reported that current staffing levels are insufficient to provide the level of personalized attention required. Participants suggested more time between the patients and the nutritionist in order for them to get much-needed counselling. For instance, participant 25: conveyed *“I think the nutritionist should also help us because, like many people, they are too fast and don't spend time talking to you. Once they get your weight and record it, they tell you if you are overweight or underweight.”* (Participant 25).

This observation indicates that the brief interactions patients currently experience with nutritionists often limit the depth of counselling and the quality of information provided. Participants expressed that the current system tends to prioritise efficiency over thoroughness, resulting in a lack of comprehensive guidance and support. The study findings suggest that increasing the number of nutritionists could improve the efficiency of nutritional counselling by providing longer, detailed consultations and tailored advice that addresses their specific needs and concerns. Furthermore, additional staffing would help to reduce the time patients spend waiting and improve the overall efficiency of the counselling process.

Theme 6: Peer support and group interaction

Participants strongly preferred incorporating peer support and group interaction into their healthcare experiences. This feedback highlights the benefits of small group sessions where patients can engage with one another, share personal experiences, and receive mutual support.

Participant 22 emphasized the value of such interactions, *“Maybe they should put us in small groups where we can talk to each other and share experiences. It encourages us, and we can learn from one another so that we can help each other. I find it difficult even to talk to the person next to me on the line. I think they should help us interact with each other”*. (Participant 22).

This statement reflects a desire for structured group settings that foster communication and support among individuals facing similar health challenges. Participants indicated that small group sessions would provide a supportive environment where they could discuss their experiences, exchange advice, and offer encouragement. The idea is that peer interactions can enhance motivation and offer practical insights based on shared experiences.

The findings suggest that peer support groups could play a crucial role in helping patients manage their health conditions more effectively. Such groups can create a sense of community and reduce feelings of isolation, as individuals can connect with others who understand their struggles first-hand. The social support provided by peers can also boost morale and increase adherence to treatment regimens. Moreover, participants noted that opportunities for group interaction could enhance their overall well-being by building strong social support networks. The process of sharing experiences and learning from others can contribute to emotional resilience and a greater sense of belonging.

DISCUSSION

Firstly, participants reported significant difficulties in accessing healthcare facilities due to transportation constraints and long distances between their communities and hospitals. This aligns with prior research

conducted in developing countries, highlighting distance, transportation costs, and time as prominent barriers to accessing HIV care among older adults and individuals living in underdeveloped regions (Kiplagat *et al.* 2019; Schatz *et al.* 2019; Mwai *et al.* 2013; Martinez *et al.* 2014; Van Wyk & Moomba 2019). Further, Bajunirwe *et al.* (2018) argued that distance is a significant barrier to accessing services and treatments, even for routine blood collection. These findings underscore a broader consumer science issue related to the accessibility and affordability of services, which affects consumer decision-making and utilization of health services. This is a common issue in most underdeveloped nations, where distance and transport costs are high. The challenge of long distances and transportation costs reflects the consumer experience of geographical and financial constraints, which can influence service utilization patterns and overall health outcomes

Secondly, the study revealed a scarcity of time allocated for patient care, attributed to the overwhelming demand for services. Participants expressed the need for more quality time with healthcare professionals, particularly nutritionists, to receive adequate support and counselling. This echoes existing literature citing time constraints as a major impediment to providing preventive care during appointments, resulting in clinicians prioritising acute conditions over preventative measures. Maertens (2011) noted that time constraints and low patient education can lead to clinicians relying on personal intuition, chronic illness triggers, and patients requests for preventive services. Insufficient interaction time can diminish service value and effectiveness, which aligns with consumer behaviour theories that emphasize the importance of service quality in shaping consumer experiences and outcomes.

Inadequate health personnel emerged as

another significant challenge, with participants expressing frustrations over delays in service access and the limited availability of healthcare providers. Similar findings have been observed in previous studies, with workforce shortages identified as a barrier to implementing nutrition education and counselling services in developing countries. Dzinamarira *et al.* (2020) study found that lack of resources, food insecurity, and a lack of feeding supplements were challenges health workers faced in the nutritional management of their clients, highlighting the need for improved institutional capacity. A study in Addis Ababa, Ethiopia, found that people living with HIV face challenges in nutrition management, including behavioural changes in eating patterns, food insecurity issues, a lack of nutrition knowledge, and a lack of support (Ewune *et al.* 2021). Research shows nutrition education and counselling for PLWHIV are weak without human capital, often relying on professional staff, which is limited in low-resource settings. (Almeida *et al.* 2011; Serrano *et al.*, 2010; Martinez *et al.* 2014). Furthermore, healthcare workers themselves face challenges in nutritional management, including resource shortages, food insecurity, and limited support, underscoring the need for improved institutional capacity and support systems. The shortage of nutritionists and healthcare workers is a significant consumer science issue requiring improved institutional capacity and human capital to improve service delivery and consumer satisfaction. The study enhances consumer science by revealing barriers faced by PLWHIV in accessing nutrition education and counselling services, aligning findings with existing literature and theoretical frameworks. The study emphasizes the importance of strategies to enhance service accessibility, quality, and capacity, which are crucial for enhancing consumer satisfaction and improving health outcomes.

CONCLUSION

In conclusion, this study highlights the challenges faced by HIV/AIDS patients in Lusaka District, Zambia, in accessing nutrition education and counselling services. The findings reveal significant barriers at both systemic and individual levels, including transportation constraints, inadequate patient care, and a shortage of healthcare personnel. The study emphasises the need to improve accessibility and effectiveness of NEC services by enhancing transportation infrastructure, increasing staffing, and extending consultation times. Implementing peer support and group interaction sessions can also enhance the well-being and quality of life for this vulnerable population. The study suggests several recommendations to improve the accessibility of nutrition education and counselling (NEC) services for people living with HIV/AIDS (PLWHIV) in Zambia. These include improving transportation infrastructure, increasing staffing levels, extending consultation times, implementing peer support programmes, increasing awareness about NEC services, strengthening institutional capacity, and conducting further research to identify gaps in service delivery. To address the healthcare personnel shortage, it is crucial to recruit and train more nutritionists and healthcare providers, allocate sufficient time for patient consultations, create peer support groups, and conduct further research on factors influencing access to NEC services. The study contributes to the existing body of knowledge on HIV/AIDS care and management, raising awareness about the importance of nutrition education and counselling. This study underscores the crucial role of nutrition education and counselling in HIV/AIDS care and management, emphasizing the challenges consumers face in accessing these essential service

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REFERENCES

- Ajjawi, R. & Higgs, J., 2007, Using hermeneutic phenomenology to investigate how experienced practitioners learn to communicate clinical reasoning, *The Qualitative Report* 12 (4), 612–638.
- Almeida, L.B., Segurado, A.C., Duran, A.C., & Jaime, P.C., 2011, Impact of a nutritional counselling program on prevention of HAART-related metabolic and morphologic abnormalities, *AIDS Care* 23(6), 755–63.
- Anand, D., & Puri, S., 2013, Nutritional knowledge, attitude, and practices among HIV-positive individuals in India, *Journal of health, population, and nutrition*, 31 (2), 195–201.
- Bajunirwe, F., Tumwebaze, F., Akakimpa, D., Kityo, C., Mugenyi, P. & Abongomera, G., 2018, "Towards 90-90-90 Target: Factors Influencing Availability, Access, and Utilization of HIV Services—A Qualitative Study in 19 Ugandan Districts", *Bio Med Research International*, Article ID 9619684, 10. <https://doi.org/10.1155/2018/9619684>
- Bello, T. K, Gericke, G.J. & MacIntyre, U. E., 2019, Development, implementation, and process evaluation of a theory-based nutrition education programme for adults living with HIV in Abeokuta, Nigeria, *Front Public Health*, (12), 7-30.
- Dzinamarira, T. Pierre, G. Habtu, M. & Okova, O., 2020, Perspectives of health care providers working with HIV positive clients on nutritional challenges among people living with HIV/AIDS in Kigali, Rwanda. *Journal of Public Health International*, 2 (2), 1-7.
- Ewune, A. H., Daka K., Bekele, B. & Meskele, M., 2021, Challenges to nutrition management among patients using antiretroviral therapy in primary health 'centres' in Addis Ababa, Ethiopia: A phenomenological study, *PLoS ONE*, 16 (6), e0250919.
- Hudayani, F. & Sartika, R.A.D., 2016, Knowledge and behaviour change of people living with HIV through nutrition education and counselling, *National public health journal*, 10 (2), 107-112.
- Kaye, H. L. & Moreno-Leguizamon, C. J., 2010, Nutrition education and counselling as strategic interventions to improve health outcomes in adult outpatients with HIV: a literature review, *Africa Journal of AIDS Research*, (3)27, 1-83.
- Kiplagat, J., Mwangi, A., Chasela, C. & Huschke, S., 2019, Challenges with seeking HIV care services: perspectives of older adults infected with HIV in western Kenya, *BMC Public Health*, 19 (1), 929.
- Maertens, J. A., 2011, Barriers to Nutrition management among people living with HIV on Antiretroviral Therapy, PhD thesis, Department of Psychology, Colorado State University.
- Malama, E & Ndhlovu, D., 2023a, Lived Experiences of PLWHIV Accessing Nutrition Education and Counselling: Exploring the Benefits, Barriers and Strategies, *British Journal of Multidisciplinary and Advanced Studies: Education, Learning, Training & Development*, 4(6), 53-64.
- Malama, E. & Ndhlovu, D., 2023b, Comprehensive Nutrition Counselling for People Living with HIV and AIDS in Lusaka District Zambia: Types and Impact. *International Journal of Research and Innovation in Social Science*, 7(11), 905-912.
- Malama, E. & Ndhlovu, D., 2019, Nutrition Education, Counselling and Assessment Support Approach for People Living with HIV and AIDS: A Literature Review, *International Journal of Contemporary Applied Researches*, 6(10), 2308-1365.
- Malama, E., & Ndhlovu, D., 2019, Nutrition Education, Counselling and Assessment Support Approach for People Living with HIV and AIDS: A Literature Review, *International Journal of Contemporary Applied Researches*, 6(10), 13-35.
- Martinez, H., Palar, K., Linnemayr, S., Smith,

- A., Derose, K.P. & Ramirez, B., 2014, Tailored nutrition education and food assistance improve adherence to HIV antiretroviral therapy: evidence from Honduras, *AIDS Behaviour*, 18 (5), S566–77.
- Mc Nulty, J., 2013, Challenges and issues in nutrition education Rome: Nutrition Education and Consumer Awareness Group, Food and Agriculture Organization of the United Nations, Rome FAO.
- Mwai, G. W., Mburu, G., Torpey, K., Frost, P., Ford, N., & Seeley, J., 2013, Role and outcomes of community health workers in HIV care in sub-Saharan Africa: a systematic review, *Journal of the International AIDS Society*, 16 (1), 18586.
- Rolo, A., Alves, R., Saraiva, M. & Leandro, G., 2023, The SERVQUAL instrument to measure service quality in higher education – A case study. *SHS Web of Conferences*, 23 March, 160.
- Schatz, E., Seeley, J., Negin, J., Weiss, H.A, Tumwekwase, G., Kabunga, E., Nalubega, P., Mugisha, J., 2019, “For us here, we remind ourselves”: strategies and barriers to ART access and adherence among older Ugandans. *BMC Public Health*, 19(1), 13.
- Tesfay, F. H., Ziersch, A., Mwanri, L. & Javanparast, S., 2021, Experience of nutritional counselling in a nutritional programme in HIV care in the Tigray region of Ethiopia using the socio-ecological model, *Journal Health Population Nutrition*, 40 (1), 34.
- Tesfay, F. H., Javanparast, S., Gesesew, H., Mwanri, L. & Ziersch, A., 2022, Characteristics and impacts of nutritional programmes to address undernutrition of adults living with HIV in sub-Saharan Africa: a systematic review of evidence, *BMJ Open*, 12(1), e047205.
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