



ARTICLE CATEGORY: Original Article

Diabetes-Related Nutritional Beliefs and Behaviours Among Patients at Kitagata Hospital, Sheema District. A Qualitative Phenomenological Study

Aloysious Kamukama¹, Asimwe Mackleane² and Apuulison David Friday^{2,3*}

¹Faculty of Nursing and Health Sciences, Victoria University

²Bishop Stuart University-Mbarara

³Mountains of the Moon University, Fort Portal, Uganda

Abstract

Type 2 diabetes prevalence in Uganda is increasing due to lifestyle changes, particularly in rural areas. Beliefs and behaviors play an important role in diabetic nutrition and treatment outcomes among diabetic patients. We conducted a study investigating related diabetic nutritional beliefs and practices in the remote areas of Sheema, southwest Uganda.

A descriptive phenomenological study at Kitagata Hospital involved 18 participants from diabetic clinics or medical-surgical wards who had been enrolled for longer than a year and underwent extensive interviews for thematic analysis.

The responses revealed two main themes: 1) knowledge and awareness regarding diabetic nutrition demonstrated the necessity of diabetes education, its potential advantages and limitations, and the variety of resources available. 2) The socio-cultural background and dietary practices encompassed maintaining consistent daily routines, adhering to a balanced diet, accessing recommended diets, copying, and changing lifestyle patterns. The effectiveness was perceived as having positive health implications, although certain participants encountered difficulties.

The study highlighted the need for better information on diabetic nutrition and lifestyle patterns, as well as increased awareness among individuals, families, and communities. Also, emphasized the need for government support, such as food and treatment aid, to enhance diabetic nutrition practices and improve diabetes management.

Corresponding Author: Apuulison David Friday¹

Email: apuulison@gmail.com

Submitted: 15th May 2024 **Accepted:** 19th March 2026 **Published:** 29th May 2026

Open Access Statement: This is an open-access article distributed under the Creative Commons Attribution License

Background

Diabetes Type 2 is a metabolic disorder causing abnormal insulin secretion and action (WHO 2023). It affects 463 million adults worldwide, accounting for 9.3% of the global prevalence. By 2030, it's expected to rise to 10.2% and 10.9% by 2045 (Saeedi et al., 2020). DM is a major global health concern, particularly in African countries (Hirut et al., 2020). Diabetic nutrition significantly reduces the progression of Type 2 Diabetes by 30-60% in individuals with impaired glucose tolerance (Di Onofrio et al., 2018).

Diabetes complications, including foot ulcers, diabetic retinopathy, neuropathy, diabetic arms, heart problems, kidney failure, and stroke, significantly impact healthcare expenditure and socioeconomic conditions in developing countries like Uganda. Its prevalence is expected to rise to 6% by 2035, primarily due to urbanization and emerging unhealthy eating habits (Chiwanga et al., 2016).

Ugandan healthcare facilities frequently neglect dietary control and food choices, thereby increasing the likelihood of developing type 2 diabetes (Neema S. et al 2021). In Uganda, the diabetic prevalence was estimated at 4.1% due to low socioeconomic status and at 6.6% due to impaired glucose tolerance, while with 128 estimated number per 1000 undiagnosed Ugandan patients (Chiwanga et al., 2016).

The study carried out in Southwestern Uganda at Mbarara regional referral hospital showed that 71.5% diabetic participants were predominantly aged 50 years or more, where 66.7% were females and 71% were living in rural areas (Gladys et al., 2022). Therefore, it indicated a huge burden on perceptions and practices among people receiving health care services from these rural areas, including Kitagata, Sheema district.

Food choices among diabetes patients are of great concern as they have an impact on body mass index

(BMI), which is a potential risk indicator of type 2 diabetes mellitus. Despite being a challenging aspect of managing diabetes, dietary modification is considered the cornerstone of Type 2 diabetes mellitus (T2DM) care (Ayele et al., 2018).

Also, according to the year 2021 statistics from the office of District health officer of Sheema (DHO) indicate that 26% of diabetic patients reported that they said their exposure to T2D was their due to poor nutrition and sedentary lifestyle before they were confirmed of it while 15% of others who have experienced the complications of T2D reported to have failed to observe proper nutrition requirements and practices as the diabetic patients. The prevalence of type 2 diabetes in Uganda is increasing due to unhealthy lifestyle changes, particularly dietary changes, especially in rural areas (Kiguli J et al., 2019). Limited information on diabetic nutrition affects attitudes and behaviors among diabetic patients in isolated regions of Sheema, Southwest Uganda. Therefore, the study explored the perceptions and practices about diabetic nutrition among patients receiving health care services at Kitagata Hospital, Sheema district.

METHODS

Study design and setting

A 2022 descriptive phenomenological study

Study setting

The study, conducted at Kitagata Hospital, investigated participants' views and behaviors on diabetes nutrition and its problems, focusing on rural southwest Uganda's high-number diabetic patients. It was a qualitative study done for a one-year time frame in 2022. The study setting was chosen because it is the biggest health center located in rural areas of southwestern Uganda, with an increased number of diabetic patients receiving health care services at the hospital, according to reports from the DHO of Sheema district

Study population

The study population included all the diabetic patients receiving health care services at Kitagata Hospital.

Selection criteria

Inclusion criteria

Every research participant who was receiving health services at Kitagata Hospital's diabetic clinic was enrolled in diabetes medical care for a minimum of two months.

Exclusion criteria

Every study participant receiving diabetes medical care who declined to engage in this investigation was excluded from the study, as well as those who were critically unwell in both male and female hospital wards.

Sample/size determination

A total of 18 participants were selected from the diabetic clinic, and those admitted in medical male and female wards, and the size was determined according to the principle of saturation, where no new information was collected from study participants (Creswell, 2014), as per the recommendation for phenomenological studies.

Sampling procedure

A total of 18 participants were selected from the diabetic clinic's triaging area and interviewed individually in private rooms. They were enrolled for at least two months and consented to the study, ensuring privacy and confidentiality regarding their identification and information. A purposive sampling procedure was used in the selection of the sample size. The participants were identified from the triaging area of the diabetic clinic and were interviewed one by one in a private room, who were enrolled in the diabetic clinic for at least six months. Admitted diabetic participants were selected from the medical male and female wards of Kitagata hospital.

Four key informants were selected through diabetic clinic records as they have expertise, perceptions, and practices, who were enrolled for at least one year. Each participant was given a written consent form, then subjected to a researcher-administered interview guide according to the language of their preference, and later appreciated their participation in the study as they were ensured privacy and confidentiality about their identification and information given during and after the study.

Data collection

Data collection tool

Participants in the study were asked to complete a semi-structured interview guide delivered by the researcher. The data collection tool was developed from existing literature, and a pilot study was done at the diabetes clinic of Mbarara Referral Hospital, which involved both open and closed-ended questions that explored the perceptions and practices about diabetic nutrition, and the tool was in both Runyankore and English languages, as most participants were using the local language for communication.

Data collection procedure

The researcher obtained approval from the Bishop Stuart University Research Ethics Committee and conducted confidentiality-respecting in-depth interviews with the Medical Superintendent, Principal Nursing Officer, and diabetic clinic manager.

Data management and analysis

Field notes were taken during in-depth interviews, recorded using a phone, and securely saved for later use. Hard copies were stored in a file and later typed into a

soft copy for further thematic analysis. The notes contained respondents' sociodemographic information and were dated and labelled. The researcher translated the recorded data first from Runyankore to English, then transcribed, coded, and categorized into sub-themes, then themes for thematic analysis, interpretation, and grouping of significant findings for debate and dissemination.

Trustworthiness of data

Validity

The study was conducted with a team of specialists from Bishop Stuart University Research Ethics Committee (BSU REC), BSU-REC-2023-81, and the Nursing department, assessing the validity of an in-depth interview guide in English.

Reliability

Consistency in responses was guaranteed by providing instructions to all participants in Runyankore, and the guide was concise and easy to read for study participants.

Conformability

Incorporating participant narrative quotes into the findings allowed for the evaluation of the quality of the qualitative study.

Credibility

Participants confidently accessed the research study during 20–30-minute interviews by gaining the researcher's trust before sharing opinions and actual diets for diabetics.

Ethical considerations

The study received ethical approval from the supervisor, BSU research ethics committee, Sheema district DHO, and Kitagata Hospital medical superintendent. The study participants were provided with written informed consent for voluntary participation, and compensation was awarded for their time spent during interviews.

Dissemination

The results of the study were shared at Bishop Stuart University and the Sheema district DHO's office.

RESULTS

Socio-demographic characteristics of the participants

Most of the 18 participants were men. The median age of the study participants was 60.3 years, while the median age of those who had diabetes was 10.72 years. Many participants were farmers, the majority attended primary school, and many participants identified as Protestants, as shown in Table 1 below.

Table 1: Showing the socio-demographic characteristics of the participants

Sex	Age (years)	Years of living with diabetes	Range of years of living with diabetes	Occupation	Marital status	Education	Religion	Monthly income-Ug. Shs
Male	62	10	6-10	Farmer	Married	Primary	Anglican	<200,000
Female	47	7	4-7	Farmer	Married	Primary	Catholic	200,000
Female	65	13	11-15	Farmer	Married	None	Protestant	Unknown
Male	64	7	6-10	Farmer	Married	Primary	Protestant	100,000
Male	64	17	16-20	Business	Married	Primary	Protestant	>100,000
Male	57	15	11-15	Teacher	Married	Diploma	Catholic	>200,000
Female	57	15	11-15	Farmer	Married	Primary	Protestant	<100,000
Male	56	9	6-10	Farmer	Married	Primary	Protestant	>100,000
Male	44	3	0-5	Engineer	Married	Primary	Catholic	>150,000
Male	61	13	11-15	Business	Married	Primary	Protestant	300,000
Male	69	4	0-5	Business	Married	Primary	Protestant	Unknown
Male	77	22	21-25	Farmer	Married	Primary	Protestant	300,000
Female	65	5	0-5	Farmer	Married	Secondary	Protestant	Unknown
Male	63	4	0-5	Farmer	Married	Secondary	Protestant	<100,000
Female	65	25	21-25	Business	Married	Primary	Protestant	1,000,000
Female	53	15	11-15	Farmer	Married	Primary	Catholic	<100,000
Female	52	7	6-10	Farmer	Married	None	Protestant	<100,000
Male	65	2	0-5	Farmer	Married	Primary	Born again	Unknown

Themes

Two main themes that arose from the participants' responses were knowledge and awareness of diabetic

nutrition and the sociocultural background and dietary behaviours. Multiple sub-themes were grouped inside

each subject to provide an accurate and concise explanation of the phenomenon.

Theme 1: Knowledge and awareness of diabetic nutrition

This theme explored the participants' knowledge of diabetes, describing a subjective process that is impacted by individual differences, reasoning, and the creation of meaning that each person interprets differently. Regarding the participants' perceptions of diabetes nutrition, the researcher found four subthemes: sources of information about diabetic nutrition, negative diet perceptions, positive diet perceptions, and the definition of diabetic nutrition.

Nutrition is perceived as a positive diet.

"I know it as eating various kinds of food but taking little amounts," (IDI 08)

"Feeding on a diet without fatty and oily items to give you energy and a good life" (IDI 17)

"I take little amounts that do not increase my blood sugar levels" (IDI 08)

A diet low in salt

"I understand it as taking meals with reduced salt" (IDI 09)

"... advised by health workers, that is, nurses and doctors, like avoiding salty foods" (IDI 14)

Nutrition is perceived as a negative diet.

"I avoid preparing and eating the food items that they restricted me from eating, even when tempted by my mind" (IDI 15)

"... was feeding on an immature banana that doesn't give you good health" (IDI 02)

Sources of diabetic nutrition information

Information on diabetes nutrition could be obtained from a variety of sources, including radio shows, medical professionals, family members, diabetic literature, and organizations. The participants said that they obtained knowledge about diabetes nutrition from a variety of sources, including literature on the subject, relatives, radio stations in the Sheema district, hospitals run by medical professionals, and diabetic groups.

Radio programs

"Heard the news on the radio; hospital medical staff also informed us of the news." (IDI 04)

"... have diabetic patient groups where information about diabetic diets is received and shared" (IDI 06)

"My dad passed away from diabetes, and my brothers and parents also had the disease." (IDI 15)

Meaning of diabetic nutrition

Due to their reports of benefits and slowed disease progression, the participants demonstrated a high level of awareness and were able to determine which diet would have the least negative impact on their diabetes and be the most vital for their lives.

Awareness of diabetic nutrition outcomes

"When you follow this diet, you can control the glucose levels in your body" (IDI 06)

Significance of diabetic nutrition

"Every time I miss a meal, I get headaches, feel lightheaded, have dry skin, and feel weak all over." (IDI 09)

Theme 2: Socio-cultural background and dietary practices

The theme examined how dietary habits and sociocultural variables influenced the diabetic nutrition habits of Kitagata Hospital patients. Nutrition practices are done with an emphasis on the provision of nutrition care services, such as medical nutrition therapy, to treat or rehabilitate a sickness or condition, as well as to manage and prevent disease. Seven themes emerged from this, including diet adherence, diet education, lifestyle patterns, support and aid availability, accessibility to suggested diets, efficacy of dietary practices, and community participation.

Adherence to diet

This emerged into two categories: adoption and copying challenges while implementing these dietary routines.

Adoption to the diabetic diet

"I got used to and adapted to the diet now" (IDI 08)

"I see no more difficulties in following a diabetic diet" (IDI 17)

Copying challenges

"eat specific foods that increase my risk of getting sick and being admitted and raise my glucose levels" (IDI 06)

"My diabetes prevents me from eating the foods I want to eat." (IDI 15)

Diet Education

The participants practiced diet education from either sensitization or diet programs.

Sensitization campaigns

"The diabetic clinic advised me on how to adjust or stick to my diet." (IDI 01)

Diet programs

"I attended diabetic nutrition health education to gain more knowledge on how to maintain the diet" (IDI 07)

Lifestyle patterns

The daily regular schedules and stress were the key fundamental factors that influenced the participants' nutritional practices. This was explored by the participants' comments on the need to reduce sedentary life patterns related to the daily food eaten.

Regular daily schedules

"Per my nutritional guidelines, I should eat three times a day, starting with breakfast after taking my medications" (IDI 01)

"... eating well-prepared meals on time" (IDI 18)

Stress

"The reduced diet was due to life's stress and other things." (IDI 04)

Support systems

These participants reflected on the availability of support and assistance as a social or material support.

Social support

"I find it difficult to prepare because I live far away from my wife" (IDI 08)

"The person with whom I live or stay gives me dietary advice" (IDI 14)

Material support

"I afford by buying and seeking support from my relatives, friends, and neighbors." (IDI 17)

Accessibility of the recommended diet

This was practiced in two ways by participants: components of local foods and the recommended diet.

Components of local foods

"I miss a meal at a party or other event and always eat local food at home" (IDI 13)

Recommended diet

"I even search for money to purchase these food items (IDI 03)."

"... make porridge, meals, and pack something to eat." (IDI 08)

Effectiveness of dietary practices

The participants' experiences maintained effective health status, while others experienced complications.

Normal health status

"I follow this nutrition program every day, and it has made me feel better and healthier." (IDI 06)

"Because I follow this diet, diabetes can't seriously affect my life" (IDI 16)

Complications

"... developed eye issues as a result of this habit after quitting my prior diet" (IDI 13)

"Sometimes end up tempted to eat other funny foodstuffs." (IDI 16)

Community involvement

The role of family engagement as a basic unit in the community on nutrition programs has a great impact, according to the study participants' responses.

Family engagement

"My family always prepares the diet they told me to use" (IDI 11)

"My spouse disregarded me in the belief that he would develop diabetes." (IDI 12)

Community participation

"Church leaders provide consolation, therapy, guidance, and inspiration on Sundays or during pastoral visits to my home." (IDI 01)

"Nearby and friends paid me a visit here in the admitted male ward" (IDI 06).

Discussion and conclusion

The study findings explored diabetic nutrition perception and practice among patients at Kitagata Hospital, focusing on knowledge, awareness, socio-cultural background, and dietary practices, highlighting the limited research on diabetes prevalence in southwest Uganda.

People tend to adapt to a perceived "good" or balanced diet and avoid 'bad' or restrictive dietary habits. This suggested that people's behavior would be modified if

they have positive perceptions towards a 'healthy' diet, based on their knowledge of health issues. For example, in our study, the participants had a better understanding that taking small portions with a variety of food kinds and reducing salt was perceived as a balanced diet and good for their health. This describes perceptions of food and the link to sources of diabetic nutrition, which influence diet in a rural setting. A key finding is that participants described healthy foods in a manner that agreed with current scientific literature, as being varied, nutritious, and balanced, with a need to regulate portion sizes.

While there are conflicting world views on what does or does not constitute a healthy diet, scientific evidence primarily agrees that healthy diets are nutritious, diverse, and balanced, and that portion sizes are as important as nutritional facts about any given food (Roberto & Khandpur, 2014). However, the mismatch between what we know and what we do is also well known, and that is predominantly what we see among our participants in the present study. Participants identified a balanced diet as one of the characteristics of a healthy diet and further qualified that a balanced diet meant eating not just a variety of foods, but also balancing the different food components, such as fruit, starches, and vegetables. This is in line with prevalent and evidence-based knowledge about the need for dietary diversity and balance between the major food components (carbohydrates, proteins, fats, vitamins, and minerals) to maintain health (Kennedy, 2004; Lawton et al., 2008; Ley, Hamdy, Mohan, & Hu, 2014).

The study revealed that diabetes nutrition affects eating behavior, with individuals changing their behaviors based on knowledge of a healthy diet, particularly in rural areas, requiring portion control (Roberto & Khandpur, 2014).

Research supports the importance of a varied, balanced diet that balances carbohydrates, proteins, fats, vitamins, and minerals for health. A healthy diet should be nutrient-dense, varied, and balanced, with portion sizes being crucial (Ley, Hamdy, Mohan & Hu, 2014) and (Roberto & Khandpur, 2014).

Participants opposed a diabetic diet due to concerns about blood sugar levels and diabetes risk. They followed strict guidelines, feeling restricted and limited in food choices. They felt tempted to indulge in their favorite foods, knowing they would cause diabetes symptoms.

According to a study by Kuller (2010), participants expressed feelings of nutritional deprivation, rigid dietary control, and restrictive eating behaviors as the only ways to maintain a healthy diet and manage weight. The study found that participants received diabetes information from hospital staff, diabetic diet books, community groups, and community counselling centers. They also drew inspiration from Sheema district radio stations like Crane Radio, which broadcast weekly health programs with medical experts.

The study revealed that individuals' awareness of their food habits and their willingness to seek medical attention for health issues increased and subsequently changed.

The same was true in other research (Tshiswaka et al. 2017) where participants in the study were highly satisfied with the advice they received from medical professionals regarding nutrition and diabetes management.

Participants revealed their relatives' diabetes deaths, sparking interest and causing them to become more aware of the importance of a healthy diet.

The study found that participants positively valued a diabetic diet for maintaining stable blood glucose levels, believing it helped manage diabetes and reduce its effects.

Analogous results obtained in Ethiopia and Sri Lanka by Ranasinghe et al. (2015) found that most participants recognized the importance of nutrition in managing type 2 diabetes.

Diet value is crucial for diabetes management, promoting longevity, and reducing overreliance on diet. The study found that participants' commitment to their dietary habits was characterized by good adherence and adaptability, with fewer issues and an increased likelihood of sticking to the diet.

The study examined copying problems, where participants felt forced to abandon their preferences due to restrictions. The participants reported a challenging adjustment to new dietary practices, highlighting the impact of the rules on their willingness to cooperate.

The study examined the need for support and assistance for participants struggling with maintaining a healthy diet due to their circumstances. Participants believed eating fruits and vegetables, and drinking water or juices, were essential for a balanced diet. Having a companion was considered a supportive obligation.

A study by Hirut (2020) found that financial constraints are a major obstacle to the dietary habits of individuals with diabetes in Sheema, Uganda, who are forced to adapt to extended travel.

A study found that some participants struggled with changing dietary preferences, leading to health issues like weight loss, diabetes, ulcers, foot problems, and headaches. This led to recurrent hospital stays, disregard from family, divorces, and surgeries on affected body parts.

The study found that family involvement is crucial for effective diabetes control. Family members assist in meal preparation, childcare, and psychological support. Financial assistance includes hospital bills, food purchases, and transportation costs. This helps prevent oversteering and decreases appetite for the diet, ensuring the affected member's well-being.

The study found that despite some religious, cultural, and political leaders providing support, there was a lack of social support for diabetic patients. Therefore, the diabetic organizations or government, through the

Ministry of Health, should provide access to reputable diabetic nutrition, promote partner participation in nutrition programs, provide financial support, and train for community and family support services.

The research explored diabetic nutrition knowledge, awareness, and practices, finding nutrition data useful in changing perceptions. Personal views suggested a lack of diet instruction, lifestyle patterns, and accessibility. Effective sources of diabetic nutrition information should be provided, and one way to change the different perceptions on diabetic diet, rather than being random information from unrecognized and unprofessional sources, is to provide information about its implications on their health. Diet education on lifestyle patterns, observing diet, and accessibility of a good diet is still insufficient, with participants practicing consistently according to individual perceptions. More individuals, families, and communities require more campaigns to increase their oversight about diabetes and diabetic nutrition, especially the partners of diabetic people with diabetes. Like other government support for diseases in Uganda, such as support care to HIV/AIDS people, diabetic clients need to be provided with aid on food and treatment to enhance diabetic nutrition practice to have effective management of diabetes. More family and community initiatives are needed; thus, this study provided an insight into how people receiving health care services at Kitagata, Sheema district, perceived and practiced their understanding of diabetic nutrition.

Strengths and limitations

The study interviewed diabetic clinic patients, community healthcare service recipients, and participants from various Sheema villages, using a comprehensive interview guide to remove the interviewer's prejudice. Also, participants with clinic appointment days not the same as the date of interviews, newly enrolled diabetic clients, and severely ill and admitted clients, limited the study.

Acknowledgments

The author expresses gratitude to the study participants, my family, who financially sponsored this study, supervisors, the research committee of Bishop Stuart University's Ruharo Nursing Campus, the Uganda Nurses and Midwives Council, the DHO of Sheema district, the medical superintendent of Kitagata Hospital, and the study participants for their involvement.

Declaration

I thank the mentorship by Assoc Prof Dr. Tom Ngabirano, Dr. Grace Mary Nakate, Dr. Katende Godfrey, Dr. Patience Muwanguzi, Dr. Keren Drateru, Mrs. Barbra Okiror, and Mrs. Mercy Mwanje.

I recognize the opportunity from the Uganda Nurses and Midwives Council, led by Mrs. Nimwesiga Christine and

Mrs. Rachel Luwaga (first mentor in research since 2020)

Thanks to my family, Mrs. Kiconco Margret, Mr. Fred, and Joy Kataanansi for supporting me to date. There are no conflicts of interest from any author or the other participants.

Disclaimer

The views, opinions, and conclusions expressed in articles published in the Uganda Journal of Nursing and Midwifery (UJNM) are solely those of the respective authors and do not necessarily reflect the official policy, position, or opinions of the editorial board, publisher, reviewers, affiliated institutions, or partners of the journal. While every effort is made to ensure the accuracy, reliability, and integrity of the information published, the Uganda Journal of Nursing and Midwifery (UJNM) and its publisher shall not be held responsible for any errors, omissions, or consequences arising from the use of the information contained in this publication. Readers are encouraged to independently verify clinical practices, drug dosages, procedures, and research findings before application in professional practice.

References

1. Ajayi I, Todd R, Jimmy V, Laurence, Hans A, Michelle H, David G, Joan N, Faraja S, Marina A, Megan B, Francis B, Robert K, Clement A, Ajayi I, and Shona, D (2016). Diabetes prevalence in Tanzania and Uganda, including urban and rural areas, as well as pre-diabetes and risk factors for the disease.
2. Al-Thani, Al-Anoud, Farghaly, Aiman Akram, Hammad Khalifa, Shams Eldin Vinodson, Benjamin Loares, Alma Abou-Samra, Abdul-Badi 2019. Knowledge and perception of diabetes and available services among diabetic patients in the state of Qatar. <https://doi.org/10.5195/caigh.2019.333>
3. Arana and associates (2019). A qualitative focus group research investigating patients' opinions of dietary recommendations for diabetics called "Being tested but not educated."
4. Bano, A., Afzal, M., Sarwar, H., Waqas, A., Kousar, S., & Gulzar, S. (2017). Dietary knowledge, attitude, and practices of diabetes patients at the Services Hospital, Lahore. <https://doi.org/10.3126/ijasbt.v5i2.17625>
5. Bekalu G, Hirut B, Adisu A, and Abebe M (2020). Systematic Review of African Barriers and Strategies to Lifestyle and Dietary Pattern Interventions for Type 2 Diabetes Prevention and Management. <https://doi.org/10.1155/2020/7948712>
6. Chiwanga, F. S., Njelekela, M. A., Diamond, M. B., Bajunirwe, F., Guwatudde, D., Nankya-Mutyoba, J., & Dalal, S. (2016). Urban and rural prevalence of diabetes and pre-diabetes and risk factors associated with diabetes in Tanzania and Uganda. <https://doi.org/10.3402/gha.v9.31440>
7. Hemalatha S., Maureen C., Andrea B., Anika D., and Riediger N (2021). An investigation into the perceived socio-cultural settings and health risks associated with sugar-sweetened beverages among adults enrolled in or employed by a postsecondary institution in Dharwad, India, using a qualitative research design.
8. Kiguli, J., Alvesson, H. M., Mayega, R. W., Kasujja, F. X., Muyingo, A., Kirunda, B., ... & Daivadanam, M. (2019). Dietary patterns and practices in rural eastern Uganda: Implications for prevention and management of type 2 diabetes. <https://doi.org/10.1016/j.appet.2019.104409>
9. Neema, S., Mutungi, G., Mwebaze, S., & Bahendeka, S. (2021). "Fat People Are More Respected": Socio-Cultural Construction of Obesity and Overweight Risk & Prevention in Ugandan Communities. https://doi.org/10.1007/978-981-16-2546-6_7
10. Riediger, N., Dhalla, A., Cooper, M., Bombak, A., & Sreeramaiah, H. (2021). A qualitative analysis of the perceived socio-cultural contexts and health concerns of sugar-sweetened beverages among adults studying or working at a post-secondary institution in Dharwad, India. <https://doi.org/10.1186/s12889-021-11033-y>
11. Saeedi, P., Petersohn, I., Salpea, P., Malanda, B., Karuranga, S., Unwin, N., & IDF Diabetes Atlas Committee. (2019). Global and regional diabetes prevalence estimates for 2019 and projections for 2030 and 2045.
12. Shah, M. K., Naing, S., Kurra, N., Weber, M. B., Islam, N., Ali, M. K., & Narayan, K. V. (2022). A culturally adapted, social support-based, diabetes group visit model for Bangladeshi adults in the USA. <https://doi.org/10.1186/s40814-022-00974-9>
13. Xiaoying Wang, Bo Tian, Shengfa Zhang, Jina Li, Weiping Yang, Linni Gu, Weijun Zhang, Underlying mechanisms of diabetes knowledge influencing diabetes self-management behaviors among patients with type II diabetes in rural China.