MAKERERE UNIVERSITY

COLLEGE OF VETERINARY MEDICINE, ANIMAL RESOURCES AND BIOSECURITY

DEPARTMENT OF ANIMAL PRODUCTION AND MANAGEMENT TECHNOLOGY (BAPTM)

ASSESSMENT OF THE KNOWLEDGE, ATTITUDES AND PRACTICES ON YOGHURT CONSUMPTION AMONG YOUTHS AT MAKERERE UNIVERSITY, KAMPALA UGANDA

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A SPECIAL RESEARCH PROJECT REPORT SUBMITTED TO THE COLLEGE OF VETERINARY MEDICINE, ANIMAL RESOURCES AND BIOSECURITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A DEGREE OF BACHELOR OF ANIMAL PRODUCTION TECHNOLOGY AND MANAGEMENT OF MAKERERE UNIVERSITY

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DECLARATION

I, Amos Mukiibi, hereby declare that this report is entirely an original copy of the work done by myself and has not been submitted to any other institution for the award of any degree, diploma or academic certificate.

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DEDICATION

I dedicate this research dissertation to my mother Maria Gorret Nakato, my Siblings and the family of Mrs Nakiwala Juliet for their timeless support, relentless and unwavering support, love, encouragement and sacrifices have helped me through my academic journey. They have been the pillars of my strength. I also dedicate this research to all Ugandan smallholder dairy farmers, who work tirelessly to nourish our nation.

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LIST OF ABBREVIATIONS AND ACRONYMS

BAPTM	Bachelor of Animal Production and Management Technology
CAES	College of Agricultural and Environmental Sciences
CEDAT	College of Engineering, Design, Art and Technology
CEES	College of Education and External Studies
CHS	College of Health Sciences
CHUSS	College of Humanities and Social Sciences
CoBAMS	College of Business and Management Sciences
CoCIS	College of Computing and Information Sciences
CoNAS	College of Natural Sciences
CoVAB	College of Veterinary Medicine, Animal Resources and Biosecurity
DDA	Dairy Development Authority
FAO	Food and Agriculture Organization of the United Nations
KAP	Knowledge, Attitudes and Practices
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
NDP III	Third National Development Plan
SPSS	Statistical Package for Social Sciences
TPB	Theory of Planned Behaviour
UBOS	Uganda Bureau of Statistics
UGX	Ugandan Shillings
WHO	World Health Organization

ABSTRACT

Background: Yoghurt is a nutritionally rich fermented dairy product associated with documented benefits for gut health, immune function, metabolic health, and bone development. Despite growing commercial availability in Uganda, yoghurt consumption among Ugandan university students has remained far below the World Health Organization's recommended two to three daily dairy servings. University students represent a critical yet under-examined population whose dietary habits, once formed, tend to persist into adulthood.

Objectives: This study had two specific objectives: (i) to determine the knowledge and attitudes on yoghurt consumption among students at Makerere University; and (ii) to evaluate the practices on yoghurt consumption among those students.

Methods: A cross-sectional descriptive study with analytical components was conducted among students at Makerere University, selected through proportional stratified random sampling across all nine colleges and both on-campus and off-campus residential categories. Using the Taro Yamane (1967) formula, a minimum sample of 396 students had been targeted; a total of 423 valid, fully-screened questionnaires were ultimately collected and retained for analysis, exceeding this target. Data were collected using a structured, pre-tested questionnaire administered digitally via Google Forms. Data were exported to Microsoft Excel, cleaned, and analyzed in the Statistical Package for Social Sciences (SPSS) using descriptive statistics, Chi-square tests of association, Spearman's rank-order correlation, and Cronbach's alpha for scale reliability.

Results: Knowledge of yoghurt among respondents was overwhelmingly poor, with 89.4% of the 423 respondents classified as not knowledgeable, 5.4% Fairly knowledgeable, and only 5.2% knowledgeable (mean Knowledge Score = 3.64 out of 20, SD = 4.65). Basic, experiential facts (the need for refrigeration, yoghurt's nutritional richness relative to milk) were far better known than technical or microbiological facts (specific starter cultures, the effect of heat on probiotic viability), the latter answered correctly by fewer than 10% of respondents. In contrast, attitudes toward yoghurt were predominantly positive: 59.6% of respondents held an in favor of yoghurt consumption overall attitude, 39.2% Neutral, and only 1.2% not in favour of yoghurt consumption, with the most favorable sub-domain scores recorded for Taste and Enjoyment

(mean = 4.15/5) and Health and Nutrition (mean = 4.14/5), and the least favourable for Cost and Value (mean = 3.97/5). The 25-item attitude scale demonstrated excellent internal consistency (Cronbach's alpha = 0.907). Knowledge Level and Attitude Level were not significantly associated as categorical variables ($\chi^2 = 3.98$, df = 4, p = .409), although a weak, statistically significant negative correlation was found between the continuous knowledge and attitude scores (Spearman's rs = -0.195, $p < .001$). With respect to practices, yoghurt consumption was found to be almost universal (99.8% of respondents were consumers), but consumption frequency was bimodal, with 44.7% consuming yoghurt 2-3 times a week and 43.3% consuming it only about once a month. University canteens were the dominant point of purchase (84.9%), self-choice was the leading influence on purchase decisions (91.5%), price was the most important factor in brand choice (69.5%), and consumption rose markedly during examination periods (74.2%) relative to the regular semester (27.2%).

Conclusions and Recommendations: The study concluded that Makerere University students hold favourable attitudes toward yoghurt and consume it almost universally, but that both their factual knowledge of the product and their frequency of consumption remain limited, constrained principally by cost and by specific, identifiable gaps in technical nutritional knowledge rather than by a lack of interest. Low cost nutritional educational campaigns can be designed for university students to create awareness that addresses knowledge gaps in this study.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Dairy products occupy a central position in global food security and human nutrition. The Food and Agriculture Organization of the United Nations (FAO) estimated that approximately one billion people worldwide depended on the dairy sector for their livelihoods, while milk and dairy foods contributed substantially to dietary protein, calcium, vitamin B12, and riboflavin intakes across all income levels (FAO, 2022). Among dairy products, yoghurt attracted particular scientific and public health interest because its fermentation process not only preserves and enhances the nutritional value of milk but also introduces live beneficial microorganisms (probiotics) that confer additional health advantages beyond those of plain milk(Yang et al. 2021). It is a nutritionally dense food and an excellent source of high-quality protein, calcium, phosphorus, potassium, B vitamins (B2 and B12) and zinc . Yoghurt has also been associated with reduced risk and severity of antibiotic-associated diarrhoea and irritable bowel syndrome (Beniwal et al. 2003).

In sub-Saharan Africa, per capita dairy consumption remained well below global averages and WHO recommendations, largely due to poverty, infrastructure constraints, and entrenched dietary patterns. Uganda's per capita milk consumption stood at approximately 64 litres per year, barely one-third of the WHO recommendation of 200 litres per year (Staal and Kaguongo 2003, Waiswa et al. 2021). However, the country has a wide range of yoghurt varieties, including set, stirred, drinking, frozen, fruit and Greek yoghurt, differing in texture, fat content, sugar content, culture composition and flavour. Apart from animal-based yoghurt, plant-based alternatives including soy, coconut, oat, almond and cashew yoghurt were also increasingly available, conferring an advantage to lactose-intolerant and vegan consumers(Dusabe et al. 2022). Commercial yoghurt brands in Uganda included Jesa Farm Dairy, Fresh Dairy, Lato, Bio Food Products, and Pin Yoghurt, available in Kampala in supermarkets and retail outlets at prices ranging from UGX 1,000 to UGX 5,000 per unit(Mukisa and Kyoshabire 2010).

University students, typically aged 18-35 years, occupy a pivotal life-course phase during which food preferences, dietary habits, and nutritional literacy are shaped and consolidated into patterns

that frequently persist through adulthood.

However, despite yoghurt being widely available, affordable and nutritionally superior with numerous health benefits, its consumption amongst university students at Makerere University is low. This study therefore sought to establish the knowledge, attitudes and practices on yoghurt consumption among students at Makerere University, Kampala, Uganda

1.2 Problem statement and significance

Despite yoghurt being a nutritionally rich fermented dairy product with well-documented benefits for gut health, immune function, metabolic function, and disease prevention, its regular consumption among Ugandan university students remains low. Uganda's per capita milk consumption of 64 litres per year stood at less than one-third of the WHO recommendation of 200 litres per year (Staal and Kaguongo 2003, Statistics 2022). Yoghurt occupied an even smaller fraction of this limited intake, suggesting that the majority of Ugandan university students were not meeting daily dairy nutrition targets, yet the factors leading to this are scantily documented. Existing studies in Uganda had examined broad dairy value chains(Mukisa and Kyoshabire 2010) and general nutritional habits, but none had comprehensively assessed the KAP specifically on yoghurt at Makerere University. With empirical foundation from the KAP study, promotional campaigns and nutrition education programs with specificity needed to effect meaningful change in consumption can be created.

1.3 Objectives of the study

1.3.1 General objective

To establish the knowledge, attitudes and practices on yoghurt consumption among students at Makerere University, Kampala, Uganda.

1.3.2 Specific objectives

1. To establish the knowledge and attitudes on yoghurt consumption among students at Makerere University.

2. To establish the practices on yoghurt consumption among students at Makerere University.

1.4 Research questions

1. What is the knowledge and attitudes on yoghurt consumption among students at Makerere University?

2. What are the practices on yoghurt consumption among students at Makerere University?

1.5 Justification and significance

This study was justified on multiple grounds spanning public health, agricultural development, and academic contribution. From a public health standpoint, the findings provided Makerere University's Department of Student Affairs and the University Health Service with an empirical KAP profile of students' yoghurt consumption, which can inform future nutrition education and campus food-service planning. From an agricultural and economic development perspective, increased yoghurt demand at Makerere University, home to over 36,000 students, represents a significant market opportunity for smallholder dairy farmers, more than 95% of whom produce Uganda's raw milk (Ariong and Van Campenhout 2024).

CHAPTER TWO

LITERATURE REVIEW

2.1 Yoghurt: definition, types, and nutritional composition

Yoghurt is defined by the Codex Alimentarius Commission as a coagulated milk product obtained by fermentation of milk using a symbiotic culture of Streptococcus thermophilus and Lactobacillus delbrueckii subsp. bulgaricus, with or without other lactic acid bacteria (Ayivi and Ibrahim 2022). The word derives from the Turkish 'jugurt', referring to the thickened, acidified product produced when these starter cultures metabolise lactose to lactic acid, which denatures milk proteins and imparts the characteristic tangy flavour and semi-solid texture (Younus et al. 2002, Yang et al. 2021). It is produced in several forms based on manufacturing process and composition. Set yoghurt is fermented in the retail container and has a firm gel structure; stirred yoghurt is fermented in bulk and stirred to produce a pourable consistency; and drinking yoghurt is further homogenised to a fluid state. Additional distinctions include plain versus flavoured varieties, full-fat versus reduced-fat formulations, and probiotic yoghurts containing elevated concentrations of specific live cultures such as *Lactobacillus acidophilus* and *Bifidobacterium spp*. (Weerathilake et al. 2014).

Plant-based yoghurt alternatives (derived from soy, coconut, oat, almond, or cashew bases) have emerged as options for lactose-intolerant individuals, a consideration of particular relevance in sub-Saharan Africa where primary lactase deficiency is prevalent(Dusabe et al. 2022, Reyes-Jurado et al. 2023). Per 100 g, standard full-fat yoghurt provides approximately 3.5 g of protein, 3.3 g of fat, 4.7 g of carbohydrate, 120 mg of calcium, 0.14 mg of riboflavin, and 0.37 mcg of vitamin B12, along with live lactic acid bacteria at counts typically exceeding 10^7 colony-forming units per gram (Lopez-Garcia et al. 2015). This nutritional density makes yoghurt a superior source of key nutrients relative to many staple foods in East Africa.

2.2 Health benefits of yoghurt consumption

The health benefits of regular yoghurt consumption are well-supported by clinical and epidemiological evidence. With respect to gut health, the live cultures in yoghurt improve lactose digestion, reduce symptoms of lactose intolerance, and modulate the intestinal microbiome in

favour of beneficial microbial populations (Xu et al. 2015). A study by Lopez-Garcia (Lopez-Garcia et al. 2015) demonstrated that habitual yoghurt consumption was positively associated with higher health-related quality of life scores and a lower prevalence of metabolic risk factors in a prospective European cohort.

Regarding immune function, yoghurt's probiotic cultures stimulate immunoglobulin A production, enhance natural killer cell activity, and modulate cytokine profiles in favour of anti-inflammatory responses. Asemi (Asemi et al. 2011) demonstrated in a randomised controlled trial that daily consumption of probiotic yoghurt significantly reduced serum biomarkers of inflammation and oxidative stress. Prospective dietary-survey data from a large European cohort study also linked higher yoghurt intake with a reduced risk of incident Type 2 diabetes (Ejtahed et al. 2011, Panahi and Tremblay 2016). For bone health, yoghurt's calcium, phosphorus, and protein content supports bone mineralisation during the critical peak bone mass accumulation period, which coincides with the age range of university students (Lopez-Garcia et al. 2015).

2.3 Global and regional yoghurt consumption patterns

Globally, per capita yoghurt consumption has historically been highest in Western and Northern Europe, regularly exceeding 15-25 kg per person per year, driven by cultural traditions, industrial dairy infrastructure, and explicit promotion in national dietary guidelines (Oliveira et al. 2022). In the United States, per capita yoghurt consumption grew substantially following the popularisation of Greek yoghurt, reaching approximately 7 kg per person annually by 2020(Tunick 2009).

In sub-Saharan Africa, traditional fermented milk products have deep cultural roots, but commercial yoghurt consumption has remained limited by price, cold chain infrastructure gaps, and low dairy awareness (Gahlot and Singh 2025). Uganda's national per capita dairy consumption of 64 litres per year falls far below the WHO recommendation of 200 litres (UBOS, 2021). Among young adults and university students in Africa, published consumption data have been sparse.

2.4 The KAP framework

The KAP model was first formalised in the 1950s in the context of family planning research and has since been widely applied in health and nutrition studies (Landolt 2007). It posits that health-related behaviours (Practices) are shaped by Knowledge, the information an individual holds about

a topic, and Attitudes, the values, beliefs, and affective responses that mediate between knowledge and action. The model's strength lies in its diagnostic utility: by measuring all three components simultaneously, a researcher can identify precisely where the knowledge-attitude-behaviour chain breaks down and design targeted interventions accordingly.

2.5 Knowledge about yoghurt among young adults

Published evidence has consistently identified knowledge gaps as a key driver of low dairy consumption among African youth (Huang and McCrory 2005). Common misconceptions include beliefs that yoghurt causes weight gain, that it is a luxury food unsuitable for students on limited budgets, and that its health benefits are no different from those of unfermented milk (Osakwe et al., 2021).

Nutrition education has been shown to be an effective tool for improving food knowledge among university students. A randomised educational intervention at a South African university by Nkosi et al. (2020) demonstrated that a six-week dairy nutrition awareness programme significantly increased knowledge scores by 22 percentage points and was associated with a modest but significant increase in weekly dairy servings consumed, confirming that knowledge gaps are modifiable through structured interventions.

2.6 Attitudes toward yoghurt consumption

Attitudes toward yoghurt are shaped by multiple dimensions: perceived health benefit, taste preference, price perception, cultural acceptability, peer influence, and perceived convenience (Furst et al. 1996). It was also found that price was the most commonly cited barrier, particularly among younger, cost-constrained consumers on dairy products (Parasuraman et al. 2021). Many consumers held ambivalent attitudes, acknowledging yoghurt's health credentials while simultaneously viewing it as expensive and non-essential, a pattern particularly prevalent among students. Cultural attitudes also shape dairy consumption in Uganda. Among communities with strong pastoral traditions, such as the Ankole, Bahima, and Iteso peoples of Uganda, fermented milk has longstanding cultural significance that may facilitate more positive attitudes toward commercial yoghurt. In Indonesia, dadih from fermented buffalo milk is more preferable to commercial yoghurt (Parasuraman et al. 2021).

2.7 Yoghurt consumption practices among young adults

Published data on yoghurt-specific consumption practices among East African university students have been limited. More broadly, studies report that dairy products are consumed infrequently, with few students meeting WHO recommendations. In terms of type preferences, flavoured stirred yoghurt in 125-500 ml single-serve packaging has been the most commercially dominant format in Uganda's urban market Plain and probiotic variants command a modest premium that potentially limits accessibility for cost-sensitive students. Plant-based yoghurt alternatives were not yet widely distributed in Kampala's mainstream retail market at the time of this study (Dusabe et al. 2022).

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study area

This study was conducted at Makerere University, located on Makerere Hill in Kampala, the capital city of Uganda. Established in 1922 as a technical school and granted full university status in 1970, Makerere University is the oldest and largest public university in Uganda and one of the oldest in sub-Saharan Africa. The university occupies approximately 300 acres and is organised into nine colleges: the College of Agricultural and Environmental Sciences (CAES); the College of Business and Management Sciences (CoBAMS); the College of Computing and Information Sciences (CoCIS); the College of Education and External Studies (CEES); the College of Engineering, Design, Art and Technology (CEDAT); the College of Health Sciences (CHS); the College of Humanities and Social Sciences (CHUSS); the College of Natural Sciences (CoNAS); and the College of Veterinary Medicine, Animal Resources and Biosecurity (CoVAB). The university enrols over 36,000 undergraduate and postgraduate students from Uganda and several other countries.

The university's nine halls of residence (Livingstone Hall, Nkrumah Hall, Africa Hall, Mary Stuart Hall, Complex Hall, Lumumba Hall, Mitchell Hall, Nsibirwa Hall, and University Hall) house approximately 5,500 students on-campus. A further 18,000-20,000 students reside in adjacent off-campus accommodation in the Makerere, Wandegeya, and Bwaise neighbourhoods. Yoghurt and other dairy products were commercially available at multiple points within and around the campus, including supermarkets along Makerere Hill Road, hall canteens, and informal kiosks at the campus gates. This setting made Makerere University an ideal site for studying yoghurt KAP, given the combination of a large, diverse student population, commercial yoghurt availability, and the previous absence of yoghurt-specific empirical data.

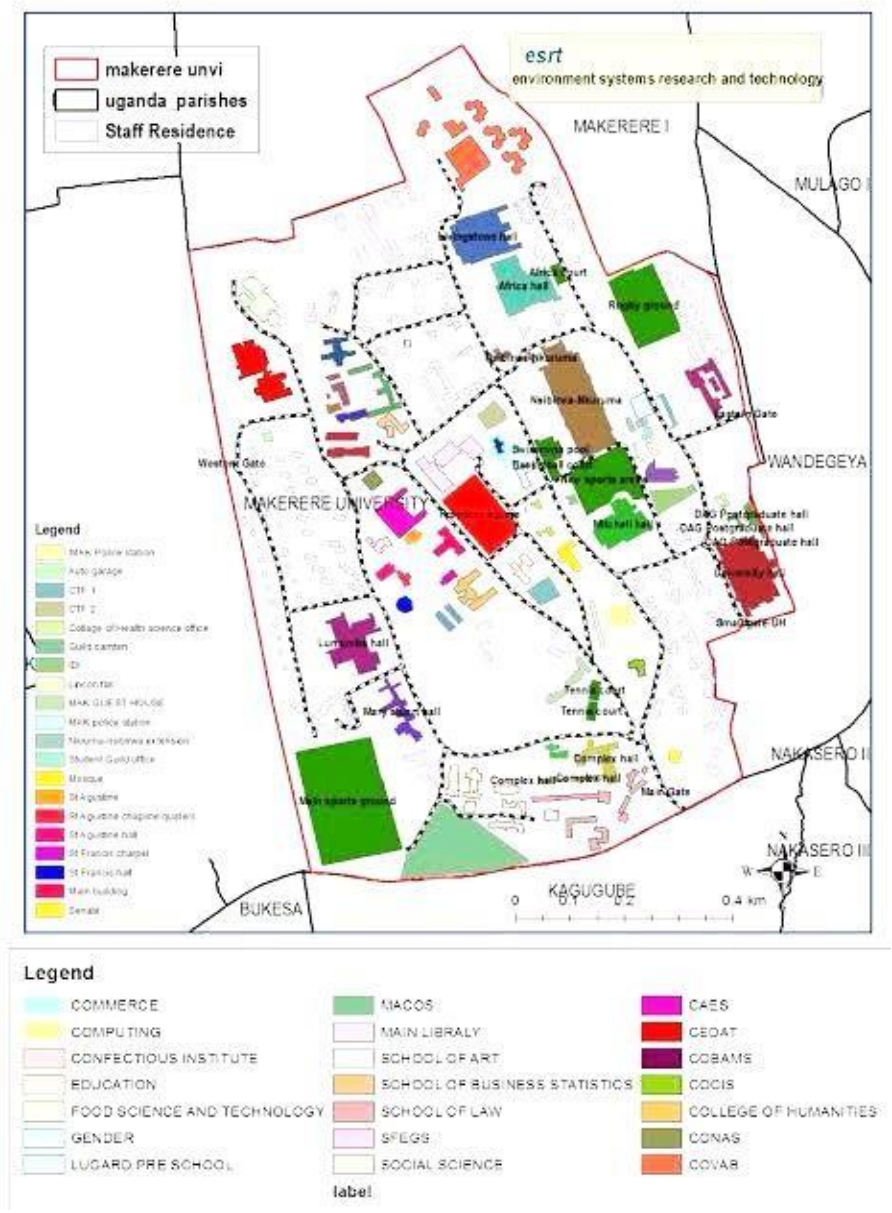


Figure 1; Map of Makerere University showing Colleges

Source: (https://share.google/dkVvIPsz6V7HjZoFl)

3.2 Study design

A cross-sectional descriptive study design was employed using survey as the data collection method. The data collection tool was a questionnaire and the data of interest was the knowledge, attitudes and practices of yoghurt consumption amongst Makerere university students. This study took three months (May to July).

3.3 Study population

The target population comprised all enrolled students at Makerere University aged 18-35 years during the second semester of the 2025/2026 academic year, estimated at approximately 36,000 students based on the university's most recently published enrolment statistics (Makerere University, 2025). The accessible population comprised students physically present on campus or in adjacent off-campus housing and available during the data collection period.

3.4 Sample size determination

The study used the Taro Yamane (1967) formula to determine the minimum sample size from the population of 36,000 students. The formula is expressed as:

$$n = N / [1 + N(e)^2]$$

Where

n = the required sample size;

N = the total population of Makerere University (36,000);

E = the standard margin of error (0.05).

A sample size of 396 students was obtained.

3.4.1 Inclusion criteria:

Individuals enrolled as students at Makerere University in the 2025/2026 academic year, aged between 18 and 35 years, present on or near the Makerere University campus during the data collection period and willing plus able to provide informed verbal consent to participate in the study.

3.4.2 Exclusion criteria:

All postgraduate students at both master's and doctoral level were excluded, given their differing socio-economic profiles and campus engagement patterns. Students who had previously participated in the pre-test of the study instrument were excluded as well.

3.5 Sampling technique

A proportional stratified random sampling approach was used to ensure proportional representation across all nine colleges and across on-campus and off-campus residential categories, using the formula below:

$n_h = (N_h / N) \times n$

Where:

n_h = the number of students sampled from a specific college;

N_h = the total number of students in that college (stratum);

N = the total population of Makerere University;

n = the required sample size (396 students).

In the first stage, the nine colleges were identified as primary strata, and the number of questionnaires allocated to each was made proportional to its share of total student enrolment. In the second stage, within each college, participants were further stratified by hall of residence for on-campus students and by off-campus area for off-campus students. Within each stratum, individual participants were selected using systematic random sampling.

Respondents were drawn from all nine colleges, with the College of Education and External Studies (CEES, 22%), College of Business and Management Sciences (CoBAMS, 18%), College of Humanities and Social Sciences (CHUSS, 15%), College of Agriculture and Environmental Sciences (CAES, 10%), College of Engineering, Design, Art and Technology (CEDAT, 9%), College of Computing and Information Sciences (CoCIS ,8%), College of Health Sciences (CHS, 8%), College of Natural Sciences (CoNAS, 6%) and College of Veterinary Medicine, Animal Resources and Bio-Security (CoVAB, 4%).

Data collection ultimately yielded 423 valid, fully-screened questionnaires, exceeding this minimum target and providing additional statistical power for the sub-group comparisons.

3.6 Data collection

3.6.1 Study instrument

Data was collected using a structured, pre-tested questionnaire administered digitally via Google Forms on Android smartphones. The questionnaire, comprising sections on socio-demographic information, knowledge, attitudes, and practices, was developed by the researcher under supervisory guidance.

In this study, Knowledge encompassed students' understanding of yoghurt's nutritional composition, health benefits, types, safe storage, and recommended daily intake. Attitudes encompassed effective responses and subjective judgements about yoghurt: perceived health value, taste satisfaction, price acceptability, and cultural congruence. Practices referred to actual yoghurt consumption behaviour: frequency, quantity per serving, types purchased, and purchasing location

3.6.2 Pre-testing

The questionnaire was pre-tested with 20 students from CoVAB to assess clarity, item comprehension and completion time; these 20 respondents were subsequently excluded from the main study sample.

3.6.3 Statistical analysis

Data entered via google forms was exported to Microsoft Excel 2019. A data-cleaning protocol was applied, cleaned data was imported into the Statistical Package for Social Sciences (SPSS) and analysed using descriptive statistics, Chi-square tests of association, Spearman's rank-order correlation, and Cronbach's alpha to assess the internal consistency of the attitude scale. A total of 423 valid questionnaires were retained for analysis after data cleaning, exceeding the minimum calculated sample size of 396 derived using the Taro Yamane (1967) formula. All 423 cases had complete data on the socio-demographic, knowledge, practice and most attitude items, with only two cases (0.5%) missing a computed Overall Attitude Level score.

3.7 Ethical considerations

Ethical approval for this study was obtained from the Makerere University College of Veterinary Medicine, Animal Resources and Biosecurity, prior to the commencement of data collection activities. All participation was entirely voluntary. Before administering the questionnaire, each respondent was verbally briefed on the study's purpose, their right to decline or withdraw at any time without consequence, and the handling of their responses. Verbal informed consent was obtained from each participant. No names or student registration numbers were recorded; Each questionnaire was assigned a unique numeric identifier to preserve anonymity. All digital data were stored on password-protected devices accessible only to the researcher, data collectors and supervisor.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presented the results of the cross-sectional survey on the knowledge, attitudes and practices (KAP) on yoghurt consumption among undergraduate students at Makerere University, highlighting the knowledge and attitudes on yoghurt consumption among students in addition to and the practices of yoghurt consumption among students.

4.2 Socio-demographic characteristics of respondents

Table1 summarises the socio-demographic profile of the 423 respondents. Slightly more than half (55.6%) were aged 18-23 years, and males (61.9%) outnumbered females (38.1%). Second-year students formed the largest proportion of respondents (40.7%), followed by first-years (34.5%). Nearly two-thirds of respondents (64.8%) resided off-campus, and the majority (56.5%) reported a monthly allowance of UGX 100,000-300,000.

Table 1: Socio-demographic characteristics of respondents (N = 423)

Variable	Category	Frequency (n)	Percent (%)
Age	18-23 years	235	55.6
	24-29 years	185	43.7
	30-35 years	3	0.7
Gender	Male	262	61.9
	Female	161	38.1
Year of Study	1st year	146	34.5
	2nd year	172	40.7
	3rd year	93	22.0
	4th year	6	1.4
	5th year	6	1.4
Residence	On-campus hall	149	35.2
	Off-campus	274	64.8
Monthly Allowance (UGX)	< 100,000	164	38.8
	100,000 - 300,000	239	56.5
	> 300,000	9	2.1
	Prefer not to say	11	2.6

4.3 Knowledge and attitudes on yoghurt consumption

4.3.1 Level of knowledge on yoghurt consumption

Knowledge was assessed using 20 likert scale questions. Those who scored <60 were categorized as not knowledgeable, those who scored >=60 but <75 were categorized as fairly knowledgeable and those who scored >=75 were categorized as knowledgeable. When categorized into not knowledgeable, Fairly knowledgeable and knowledgeable levels, the overwhelming majority of respondents (89.4%) fell into the not knowledgeable category, with

only 5.4% classified as Fairly knowledgeable and 5.2% as knowledgeable (Table 2). The distribution of scores was strongly right-skewed: 30.3% of respondents scored only 2 out of 20, and 62.9% scored 3 or fewer points.

Table 2: Overall knowledge level of respondents on yoghurt (N = 423)

Knowledge Level	Frequency (n)	Percent (%)
Not Knowledgeable	378	89.4
Fairly Knowledgeable	23	5.4
Knowledgeable	22	5.2
Total	423	100.0

4.3.2 Attitudes towards yoghurt consumption

Attitudes were measured across seven sub-domains: Health and Nutrition, Taste and Enjoyment, Cost and Value, Convenience and Accessibility, Safety and Quality, Social and behavioural and overall perception , each scored on a 5-point scale (1 = strongly disagree to 5 = strongly agree). The 25-item attitude scale demonstrated excellent internal consistency (Cronbach's alpha = 0.907). As shown in Table 3, respondents held the most favourable attitudes toward Taste and Enjoyment (mean = 4.15) and Health and Nutrition (mean = 4.14), while Cost and Value attitudes were comparatively the least favourable (mean = 3.97), suggesting that price was the main attitudinal barrier to consumption.

Table 3: Mean rank of attitude on yoghurt consumption (N = 423, scale 1-5)

Attitude sub-domain	Mean	SD
Taste and Enjoyment	4.15	0.52
Health and Nutrition	4.14	0.50
Safety and Quality Concerns	4.13	0.59
Convenience and Accessibility	4.09	0.61
Social and Behavioral	4.04	0.57
Overall Perception	3.98	0.60
Cost and Value	3.97	0.62
Overall Attitude Score	4.07	0.44

When an Overall Attitude Level was derived, 59.6% of respondents were classified as having an attitude in favour of yoghurt consumption, 39.2% as Neutral, and only 1.2% not in favour of yoghurt consumption (Table 4). This indicates that, despite generally not knowledgeable, students' attitudes toward yoghurt consumption were predominantly favourable.

Table 4: Overall attitude level of respondents toward yoghurt consumption (N = 423)

Overall Attitude Level	Frequency (n)	Percent (%)
Not in favour	5	1.2
Neutral	166	39.2
In favour	252	59.6
Total	423	100.0

4.3.3 Relationship between knowledge and attitude

A cross-tabulation of Knowledge Level Category against Overall Attitude Level (Table 5) showed that attitudes in favour of yoghurt consumption were common across all three knowledge groups, including among respondents that are not knowledgeable (60.1% positive) and those that are knowledgeable (68.2% positive). The chi-square test of association was not statistically significant ($\chi^2 = 3.98$, df = 4, p = .409), indicating that knowledge category and attitude category were not associated as grouped variables. However, a Spearman's rank-order correlation between the continuous Knowledge Score and Overall Attitude score revealed a statistically significant, weak, negative correlation (rs = -0.195, p < .001), clearly showing that knowledge on yoghurt consumption does not influence the attitudes students have towards yoghurt consumption.

Table 5: Knowledge level category by overall attitude level ($\chi^2 = 3.98$, df = 4, p = .409)

Knowledge Level	Not In favour (%)	Neutral (%)	In favour (%)	Total (n)
Not Knowledgeable	1.3	38.6	60.1	378
Fairly Knowledgeable	0.0	56.5	43.5	23
Knowledgeable	0.0	31.8	68.2	22
Total	1.2	39.2	59.6	423

4.4 Practices on yoghurt consumption

4.4.1 Yoghurt consumption status and frequency

Almost all respondents (99.8%) reported having ever consumed yoghurt, with only a single respondent (0.2%) indicating they had never done so. Among consumers, consumption frequency was bimodal: 44.7% consumed yoghurt 2-3 times a week and 43.3% consumed it only about once a month, while smaller proportions consumed it daily (2.6%) or weekly (9.5%) (Table 6). This pattern suggests that, although yoghurt consumption was nearly universal among students, frequent/habitual consumption was confined to a minority, with a substantial

group consuming only occasionally.

Table 6: Frequency of yoghurt consumption among respondents (N = 423)

Frequency of consumption	Frequency (n)	Percent (%)
Daily	11	2.6
2-3 times a week	189	44.7
Weekly	40	9.5
Once a month	183	43.3
Total	423	100.0

4.4.2 Type, flavour and packaging preferences

The majority of respondents (83.7%) most frequently consumed flavoured yoghurt, compared with plain (14.7%), Greek-style (0.2%) and fortified (1.4%) yoghurt. Vanilla was the most preferred flavour (47.5%), closely followed by strawberry (43.3%), with blueberry (7.8%) and other flavours (1.4%) far less popular. In terms of packaging, small cups (150-250ml) were the most commonly purchased size (54.1% of respondents selected this option), followed by 1-litre packs (31.9%) and 500ml packs (17.0%), while other pack sizes were rarely selected (3.1%).

4.4.3 Purchasing behaviour and influences on purchase

Regarding point of purchase, University canteens ranked 1st as the most dominant purchase location (selected by 84.9% of respondents), followed by supermarkets in 2nd rank (19.9% of respondents), local shops in 3rd rank (12.8% of respondents), and online ordering platforms (such as Glovo or Cafe Javas) in 4th rank (0.9% of respondents). In terms of decision-making influences, self-choice ranked 1st as the primary influence on the decision to buy yoghurt 91.5% of respondents). Friends/peers ranked 2nd (16.3% of respondents), family ranked 3rd (3.3% of respondents), and social media/advertising ranked 4th (1.6% of respondents. This ranking

confirms that purchase decisions were overwhelmingly self-directed rather than driven by external social or promotional factors.

4.4.4 Timing and contextual patterns of consumption

Regarding time of day, yoghurt was most commonly consumed after lunch (47.8%) and at breakfast (42.6%), with smaller proportions consuming it as a between-meal snack (24.8%) or after dinner (6.4%). With respect to the university calendar, three-quarters of respondents (74.2%) reported consuming yoghurt more frequently during examination periods, compared with 27.2% during the regular semester and only 6.1% during holidays. Just over half of respondents (52.2%) most often consumed yoghurt alone in their hall of residence, while 41.6% consumed it socially with friends at the canteen.

4.4.5 Label reading and purchase decision factors

Only 2.6% of respondents reported always reading nutritional labels before buying yoghurt, while 56.5% did so sometimes, 16.1% rarely, and 24.8% never read labels at all. When asked what they first looked for on yoghurt packaging, the majority looked at price (65.2%), followed by expiry date (24.3%), flavour (6.4%), brand name (2.6%) and health claims (1.4%). Consistent with this, price was reported as the single most important factor influencing brand choice for 69.5% of respondents, well ahead of taste (25.3%), nutritional value (4.5%) and availability (0.7%). Overall, 81.1% of respondents did not use yoghurt as a meal replacement, while smaller proportions did so occasionally (13.7%) or regularly (5.2%). Since joining Makerere University, most respondents (76.6%) reported no change in their yoghurt consumption habits, while 16.1% reported an increase, 6.1% a decrease, and 1.2% began consuming yoghurt only after joining the university.

4.4.6 Association between practices and other study variables

Chi-square tests were used to examine associations between consumption Frequency and selected socio-demographic and KAP variables (Table 4.8). Overall Attitude Level ($\chi^2 = 13.51$, df = 6, p = .036), monthly Allowance ($\chi^2 = 59.70$, df = 9, p < .001), and Year of Study ($\chi^2 = 41.52$, df = 12, p < .001). In contrast, Frequency was not significantly associated with Gender ($\chi^2 = 3.02$, df = 3, p = .389) or Residence type ($\chi^2 = 1.73$, df = 3, p = .629). Notably, respondents

that are knowledgeable consumed yoghurt daily or 2-3 times a week considerably more often (50.0%) than those that are not knowledgeable (48.4%) and respondents receiving an allowance of UGX 100,000-300,000 were more likely to consume yoghurt daily or 2-3 times weekly (43.9%) than those receiving less than UGX 100,000 (53.6%).

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This chapter discussed the results in relation to the study objectives and the literature reviewed

5.2 Socio-demographic profile of respondents

The socio-demographic profile obtained (55.6% aged 18-23 years, 61.9% male, and 64.8% residing off-campus) broadly reflected the general undergraduate population structure at Makerere University, and the achieved gender split was reasonably close to the university's overall gender ratio (approximately 55% male, 45% female), with a modest over-representation of males in this sample (61.9%).

5.3 Knowledge on yoghurt consumption.

The finding that 89.4% of respondents who were not knowledgeable of yoghurt was a striking result and directly addressed the knowledge levels of yoghurt consumption. Commonly-advertised facts like refrigeration and nutritional richness were well in comparison to technical microbiological facts like starter culture species, the effect of heat on probiotics and the meaning of expiry dates for live cultures. This suggested that nutrition-related knowledge students possessed was likely absorbed informally, through product labelling, general dietary advice or lived experience rather than through structured nutrition education. If students were unaware that some heavily processed commercial yoghurts lack live cultures, they may be unable to make informed choices between products that do and do not deliver the probiotic benefits associated with yoghurt in the literature (Yang et al. 2021). This gap represented a concrete, actionable target for future nutrition messaging on campus.

5.4Attitudes towards yoghurt consumption

In contrast to the not knowledgeable scores, attitudes toward yoghurt were predominantly in favour of yoghurt consumption (59.6%), with particularly favourable scores for Taste and Enjoyment and Health and Nutrition. This indicated that Makerere University students did not

need to be persuaded that yoghurt was enjoyable or beneficial; rather, the attitudinal barrier that did exist was concentrated in the cost and value domain (Sharmin et al. 2025), which returned the lowest mean score (3.97) of the seven sub-domains.

5.5 Practices on yoghurt consumption

The results showed that yoghurt consumption was essentially universal (99.8% ever-consumers) among Makerere University students, which was an encouraging finding relative to the broader concern that Ugandan dairy consumption generally falls far short of WHO recommendations (Yamini et al. 2025). However, the bimodal frequency pattern in which comparable proportions of students consumed yoghurt 2-3 times weekly (44.7%) and only about once a month (43.3%), with very few consuming it daily (2.6%), indicated that product trial was not translating into habitual, high-frequency consumption for a large share of the sample. This distinction is critical because habitual intake, rather than occasional trial, is required to realize the sustained gut, metabolic, and bone-health benefits associated with regular yoghurt consumption (Yamini et al. 2025).

The dominance of university canteens as the primary purchase point (84.9%) and small cups as the preferred packaging (54.1%) pointed toward convenience-driven, low-commitment purchasing consistent with a budget-constrained, time-pressed student population. This observation aligns directly with the ‘Place’ (Distribution) element of McCarthy’s Marketing Mix (4Ps) framework, which posits that physical proximity and channel accessibility strongly dictate purchasing frequency in fast-moving consumer goods (Goi 2009). The finding that self-choice, rather than peers, family, or advertising, was the dominant influence on purchase decisions (91.5%) suggested that yoghurt consumption in this population was largely a personal habit rather than a socially transmitted or marketing-driven behavior; this has direct implications for how future promotional interventions should be designed.

The marked increase in consumption during examination periods (74.2%) relative to the regular semester (27.2%) may reflect students' reliance on yoghurt as a convenient, easily digestible snack or perceived energy/concentration aid during periods of heightened academic stress. Consistent with the Cost and Value attitude findings, only 2.6% of respondents reported always reading nutrition labels, with price rather than nutritional information dominating both label-reading behavior and brand choice. This finding echoes broader literature on tertiary students' food

purchasing behaviors, which confirms that financial constraints and price sensitivity routinely overshadow health and nutritional considerations when evaluating packaged food products (Baker 2016). Consequently, health-conscious messaging on packaging is likely to have limited practical influence on consumption behavior unless accompanying price barriers are simultaneously addressed.

5.6 Influence of socio-demographic and KAP factors on practices

Consumption frequency was significantly associated with knowledge level, attitude level, allowance, and year of study, but not with gender or residence type. The significant association with allowance was intuitive and reinforced the price-sensitivity narrative: students appeared to be constrained less by whether they lived on or off campus and more by disposable income. This finding closely mirrors broader literature indicating that financial capacity, rather than physical proximity to food vendors, dictates dietary choices among tertiary students. For instance, (Baker 2016) demonstrated that financial independence and limited student budgets act as the primary structural barriers to food choices, forcing students to prioritize low-cost alternatives over pricier food categories. Similarly, (Baker 2016) observed that even when students possess high nutritional awareness, limited disposable income or allowances directly curtail their actual purchasing frequency of premium nutritional goods.

Furthermore, the lack of significant association with residence type implies that campus dining halls, informal off-campus kiosks, and local supermarkets present comparable pricing barriers. This indicates that price sensitivity acts as a universal equalizer across the student population; regardless of where a student sleeps, their actual economic capital dictates their dairy intake frequency. This economic bottleneck underscores the need for campus-based nutritional interventions or subsidized dairy options, as positive attitudes and high baseline knowledge alone cannot overcome immediate financial constraints.

5.7 Study limitations

Several methodological limitations should be considered when interpreting the findings of this study. First, the cross-sectional design captured data at a single point in time, which precludes the establishment of causal or directional relationships between students' knowledge, attitudes,

and consumption practices. Second, all knowledge, attitude, and practice data were self-reported, introducing potential social-desirability or recall bias, particularly regarding practice behaviors such as nutrition label-reading frequency.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study set out to assess the knowledge, attitudes, and practices regarding yoghurt consumption among undergraduate students at Makerere University, framed around two specific objectives.

The study concluded that Makerere University students exhibited not knowledgeable baseline knowledge group regarding yoghurt, with significant technical gaps concerning its specific microbiological and probiotic properties. Despite these knowledge gaps, students held overwhelmingly positive attitudes toward yoghurt, particularly regarding its sensory appeal, taste, and general health value. Knowledge and attitude were not meaningfully linked in this population, indicating that favorable attitudes toward yoghurt were driven primarily by personal taste and perceived quality rather than technical product understanding.

The study concluded that while yoghurt consumption was nearly universal among students (99.8%), frequent, habitual intake was confined to less than half of respondents (44.7%), with purchasing heavily concentrated in university canteens (84.9%) and strongly constrained by price. Consumption practices were significantly associated with financial allowance, year of study, and overall attitude level, but showed no significant relationship with gender, residence type, or objective knowledge level. Furthermore, consumption frequency rose notably during examination periods. Taken together, these findings indicate that the primary bottleneck to regular, health-optimizing yoghurt consumption among Makerere University students is not a lack of interest or negative perception, but rather immediate financial constraints, price sensitivity, and retail affordability.

6.2 Recommendations

6.2.1 Practical recommendations

Based strictly on the empirical conclusions regarding price sensitivity, distribution channels, and technical knowledge gaps among students, the following practical measures are recommended:

Affordable product formatting and tiered pricing:

To address the strong price-sensitivity and allowance constraints identified as primary barriers, dairy processors and retailers targeting student markets should offer smaller, lower-cost packaging formats such as single-serve cups and consider student-friendly price structures.

Capitalizing on peak demand periods:

Retailers operating within student distribution networks should align promotional pricing and inventory stocking with university examination periods, leveraging the naturally occurring increase in student demand during these weeks.

Optimizing campus canteen distribution:

Given that campus canteens serve as the primary purchasing hub (84.9%), operators should prioritize consistent cold-chain management and maintain reliable stock of preferred, low-cost formats to sustain current consumption levels.

6.2.2 Recommendations for further research

To address the specific methodological limitations and analytical gaps identified in this study, future research should explore the following:

Longitudinal and causal designs:

Future studies should implement longitudinal or pre-post intervention frameworks rather than cross-sectional designs to evaluate whether addressing technical knowledge gaps directly leads to measurable changes in yoghurt consumption habits over time.

Qualitative exploration of behavioral drivers:

Qualitative or mixed-methods studies should investigate the contextual drivers behind increased yoghurt intake during examination periods specifically examining the roles of stress, convenience, and perceived cognitive benefits.

Sampling and multi-site replication:

Research should be replicated across other tertiary institutions using larger, knowledge-stratified samples to verify whether the price-driven consumption patterns and knowledge-attitude dynamics observed at Makerere University apply more broadly across the student population.

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APPENDICES

APPENDIX 1; Questionnaire: assessment of the knowledge, attitudes and practices on yoghurt consumption among undergraduate students in Makerere University

Dear Respondent, I am Amos Mukiibi, a finalist undertaking Bachelors of Animal Production and Management Technology at Makerere University at College of Veterinary Medicine, Animal Resources and Biosecurity (COVAB). I am conducting a research on 'Assessment of the Knowledge, Attitudes and Practices on yoghurt consumption among undergraduate students in Makerere University', as a requirement to complete the course. You are amongst the randomly selected respondents to provide me with appropriate information about that theme. The information given will be treated with utmost confidentiality and for academic purposes only. Thank you.

1. Consent

Choose yes if you consent ☐ Yes ☐ No

SECTION A: SOCIO-DEMOGRAPHIC INFORMATION

2. What is your age group?

   ☐ 18 - 23 years ☐ 24 - 29 years ☐ 30 - 35 years ☐ Above 35 years

3. What is your gender?

   ☐ Male ☐ Female ☐ Prefer not to say

4. What is your current year of study?

   ☐ 1st year ☐ 2nd year ☐ 3rd year ☐ 4th year ☐ 5th year or above

5. Which college do you belong to?

   ☐ COVAB ☐ CHS ☐ CEDAT ☐ CONAS ☐ CoBAMS ☐ CEES ☐ CoCIS ☐ CAES

   ☐ CHUSS

6. What is your residence type?

   ☐ On-campus hall ☐ Off-campus

7. What is your average monthly allowance? (in UGX)

☐ Less than 100,000 ☐ 100,000 - 300,000 ☐ More than 300,000 ☐ Prefer not to say

SECTION B: KNOWLEDGE

Choose one option per row.

(SDA = Strongly Disagree, DA = Disagree, N = Neutral, A = Agree, SA = Strongly Agree)

Statement	SDA	DA	N	A	SA
Yoghurt is produced by bacterial fermentation of milk	○	○	○	○	○
The starter cultures in yoghurt are *Streptococcus thermophilus* and *Lactobacillus bulgaricus*	○	○	○	○	○
The live bacteria in yoghurt can survive in the product until consumption	○	○	○	○	○
The probiotic bacteria in yoghurt can improve gut health	○	○	○	○	○
Yoghurt is a good source of calcium and protein	○	○	○	○	○
Flavoured yoghurts usually have higher sugar content than plain yoghurt	○	○	○	○	○
People who are lactose intolerant can sometimes digest yoghurt better than milk	○	○	○	○	○
Consuming yoghurt daily can help prevent or manage diarrhea	○	○	○	○	○
Yoghurt should be kept or stored in a refrigerator to maintain its quality and safety	○	○	○	○	○
Heating yoghurt completely destroys its probiotic content	○	○	○	○	○
Yoghurt can be used as a substitute for some ingredients in baking	○	○	○	○	○
Reading the nutrition label and expiry date on yoghurt packaging is important	○	○	○	○	○
Greek yoghurt is strained to remove whey, making it thicker and higher in protein than regular yoghurt	○	○	○	○	○
Regular yoghurt consumption can help lower blood pressure and reduce the risk of heart disease	○	○	○	○	○

Yoghurt can help replenish gut bacteria after a person taking antibiotics	○	○	○	○	○
The expiry date on yoghurt indicates the date until which the live cultures are guaranteed to be active	○	○	○	○	○
Probiotic yoghurt should not be frozen because it can change texture and reduce probiotic viability	○	○	○	○	○
Some yoghurts sold in Uganda may not contain live culture if they are heavily pasteurized after fermentation	○	○	○	○	○
All commercial yoghurts sold in Uganda contain live active cultures	○	○	○	○	○
All commercial yoghurts sold in Uganda contain live active cultures	○	○	○	○	○
Yoghurt is nutritionally richer than milk	○	○	○	○	○

SECTION C: ATTITUDES

Choose one option per row.

(SDA = Strongly Disagree, DA = Disagree, N = Neutral, A = Agree, SA = Strongly Agree)

9. Health and nutritional attitudes

Statement	SDA	DA	N	A	SA
Yoghurt is good for my digestive health	○	○	○	○	○
Yoghurt is an important source of calcium and protein in my diet	○	○	○	○	○
Flavoured yoghurts are too high in sugar therefore unhealthy	○	○	○	○	○
Yoghurt is a healthy snack option for university students	○	○	○	○	○

10. Taste and Enjoyment

Statement	SDA	DA	N	A	SA
I like the taste of yoghurt	○	○	○	○	○
Flavoured yoghurt tastes better than plain yoghurt	○	○	○	○	○

Yoghurt is refreshing, especially in hot weather	○	○	○	○	○
I enjoy drinking yoghurt more than eating thick yoghurt	○	○	○	○	○

11. Cost and Value

Statement	SDA	DA	N	A	SA
Yoghurt is too expensive for me as a student	○	○	○	○	○
The health benefits of yoghurt are worth the price I pay	○	○	○	○	○
I would consume more yoghurt if it were cheaper	○	○	○	○	○

12. Convenience and Accessibility

Statement	SDA	DA	N	A	SA
Yoghurt is a convenient snack for busy students	○	○	○	○	○
It is easy to find good quality yoghurt around Makerere University Campus	○	○	○	○	○

13. Safety and Quality Concerns

Statement	SDA	DA	N	A	SA
I am concerned about the safety and hygiene of some yoghurts sold near campus	○	○	○	○	○
I trust the quality of well-known yoghurt brands more than unknown brands	○	○	○	○	○
Expiry dates on yoghurt are very important to me	○	○	○	○	○

14. Social and Behavioral Attitudes

Statement	SDA	DA	N	A	SA
I feel good about myself when I consume yoghurt daily	○	○	○	○	○
Most of my friends and fellow students consume yoghurt	○	○	○	○	○

I would be encouraged to drink more yoghurt if my friends do so	○	○	○	○	○
Yoghurt consumption is more common among female students than male students	○	○	○	○	○

15. Overall Perception

Statement	SDA	DA	N	A	SA
Yoghurt is a luxury product rather than a necessity	○	○	○	○	○
I believe yoghurt should be part of a balanced daily diet for students	○	○	○	○	○
Advertising and marketing influence my opinion about different yoghurt brands	○	○	○	○	○
I am willing to pay more for yoghurt that has added probiotics or is labelled "low sugar"	○	○	○	○	○
I worry about the environmental impact of plastic packaging used for yoghurt	○	○	○	○	○

SECTION D: PRACTICES

16. Do you or have you ever consumed yoghurt?

☐ Yes ☐ No/Never

17. If no/never consume yoghurt, what are the main reasons? (select all that apply)

☐ Lactose intolerance or digestive issues ☐ Prefer other drinks/snacks ☐ Health concerns (sugar content) ☐ Other

18. If other, specify; _____

19. How often do you consume yoghurt?

☐ Daily ☐ 2 - 3 times a week ☐ Weekly ☐ Once a month

20. At what time of the day do you typically consume yoghurt? (Tick all that apply)

☐ Breakfast ☐ After lunch ☐ Snack between meals ☐ After dinner

21. Do you consume yoghurt more frequently during specific university periods?

☐ During exams ☐ During regular semester ☐ Holidays

22. Where do you usually purchase your yoghurt? (Tick all that apply)

☐ Supermarket ☐ University Canteens ☐ Local shops ☐ Order online (Glovo or Cafe Javas)

23. Who/what usually influences your decision to buy yoghurt?

☐ Self-choice ☐ Friends/Peer ☐ Family ☐ Social media/Ads

24. What packaging size do you typically buy?

☐ Small 150ml - 250ml cups ☐ 500ml cups ☐ 1 liter can ☐ Other

25. Which type of yoghurt do you most frequently consume?

☐ Flavored ☐ Plain ☐ Greek-style ☐ Fortified

26. If fortified, which one is it?

☐ Probiotic ☐ Minerals-rich ☐ Vitamins-rich ☐ Fruit yoghurt

27. What is your most preferred flavour

☐ Vanilla ☐ Strawberry ☐ Blueberry ☐ Other

28. If other, specify; _____

29. Do you read nutritional labels before buying yoghurt?

☐ Always ☐ Sometimes ☐ Rarely ☐ Never

30. What is the first thing you look for on a yoghurt package?

☐ Expiry date ☐ Price ☐ Flavor ☐ Health claims ☐ Brand name

31. What is the most important factor to you when selecting a yoghurt brand?

☐ Price ☐ Taste ☐ Nutritional value ☐ Availability on campus

32. In what social settings do you most often consume yoghurt?

☐ Alone in the hall of residence ☐ With friends at the canteen ☐ While walking to lectures ☐ While going back home or place of residence

33. Do you use yoghurt as a meal replacement?

☐ Yes ☐ No ☐ Maybe

34. Have you changed your yoghurt consumption habits since joining Makerere University?

☐ Yes (Increased) ☐ Yes (Decreased) ☐ No change ☐ I started consuming yoghurt here

35. What are the main reasons you consume yoghurt?

Choose one option per row.

(SDA = Strongly Disagree, DA = Disagree, N = Neutral, A = Agree, SA = Strongly Agree)

Factor	**SDA**	**DA**	**N**	**A**	**SA**
Price	○	○	○	○	○
Brand reputation	○	○	○	○	○
Flavour	○	○	○	○	○
Nutritional information	○	○	○	○	○
Package size	○	○	○	○	○
Availability near you	○	○	○	○	○
Expiry date	○	○	○	○	○
Probiotic content	○	○	○	○	○

36. What factors influence your decision to buy a particular yoghurt?

Factor	SDA	DA	N	A	SA
Price	○	○	○	○	○
Brand reputation	○	○	○	○	○
Flavour	○	○	○	○	○
Nutritional information	○	○	○	○	○
Package size	○	○	○	○	○
Availability near you	○	○	○	○	○
Expiry date	○	○	○	○	○
Probiotic content	○	○	○	○	○

Appendix 2; Percentage of respondents answering each knowledge item correctly (N = 423)

Item	Knowledge statement (abbreviated)	% Correct
K1	Yoghurt is produced by bacterial fermentation of milk	17.7
K2	Starter cultures are S. thermophilus and L. bulgaricus	11.3
K3	Live bacteria in yoghurt can survive until consumption	13.0
K4	Probiotic bacteria in yoghurt can improve gut health	15.1
K5	Yoghurt is a good source of calcium and protein	14.2
K6	Flavoured yoghurts have higher sugar than plain yoghurt	13.7
K7	Lactose-intolerant people can sometimes digest yoghurt better than milk	11.8
K8	Yoghurt can help prevent/manage diarrhoea	10.9
K9	Some Ugandan yoghurts may lack live culture if heavily pasteurised	45.4
K10	Heating yoghurt completely destroys its probiotic content	13.0
K11	Yoghurt can substitute some baking ingredients	8.3
K12	Reading nutrition label/expiry date is important	16.1
K13	Greek yoghurt is strained, thicker and higher in protein	9.7
K14	Regular consumption may lower blood pressure/heart disease risk	7.3
K15	Yoghurt can replenish gut bacteria after antibiotics	13.2
K16	Expiry date indicates live-culture viability period	10.9
K17	Probiotic yoghurt should not be frozen	8.7
K18	All commercial Ugandan yoghurts contain live active cultures	9.5
K19	Yoghurt should be refrigerated to maintain quality/safety	51.5
K20	Yoghurt is nutritionally richer than milk	62.2

This table presents the proportion of respondents who answered each individual knowledge item correctly. The best-known facts were that regular yoghurt consumption is associated with health benefits (K20, 62.2% correct) and that yoghurt should be refrigerated to maintain quality and safety (K19, 51.5% correct), while awareness that some locally-sold yoghurts may not contain live cultures if heavily pasteurized after fermentation (K9) was correct for 45.4% of respondents. In contrast, fewer than 1 in 10 respondents correctly identified more technical facts, such as the specific starter cultures used in yoghurt production (K11, 8.3%), the effect of heating on probiotic content (K14, 7.3%), and the meaning of the expiry date in relation to live culture viability (K17, 8.7%), indicating that basic/experiential knowledge about yoghurt was considerably stronger than technical/microbiological knowledge.

Appendix 3; Different commercial yoghurt brands sold in Kampala

