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Balancing diets: diverse values shaping sustainable food choices

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Abstract

Purpose – The paper aims to explore how values and knowledge are expressed in student's discussions about food and health.

Design/methodology/approach – Food practices present a complex phenomenon extending beyond biomedical descriptions, including social dynamics of food in families and communities. Contextual conditions of social groups and settings have significant impacts on food choices and practices. Although values constitute a central part of educational goals, deliberate values education remains an often-neglected area, with a tendency in both curricula and educational practice to focus on knowledge and overlook how values intersect with knowledge. The paper utilises group interviews supported by participant observations to study the food and health practices as expressed in students' discussions.

Findings – The paper's findings show how values are expressed together with knowledge as value-knowledges around food and health within the social contexts of family, cultural identities and peer relationships. While moving through their lives, students draw on and utilise biomedical, social-cultural and sensory value-knowledges, simultaneously considering the nutrition and taste of foods, the value of connecting with family and peers in cultural settings as well as getting enough food to feel satiated.

Originality/value – The paper presents an original approach around the necessity to consider and integrate cultural identities in discussions and education about food and health to empower students and their communities in a way that is socially just and equitable. This involves shifting discussions of health education away from students as (ir)rational obstacles but rather as partners in co-creating knowledge for sustainable food and health equity.

Keywords Health education, Education for sustainable development, Social change, Global health, Environmental health

Paper type Research paper

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Introduction

Deciding what to eat is a recurring familiar conversation; however, the answer may shift whether we are with friends or family, taking part in cultural practices. These shifting understandings of eating and food extend beyond the family to include school, where students spend a significant part of their day with implications for their health education. What we eat and how we eat affects our health, with social environments intersecting with political and commercial determinants, creating conditions for our food practices (Higgs and Ruddock, 2020; Robinson *et al.*, 2013; World Health Organization, 2013). With impacts on land, water and climate, food choices represent significant challenges to human and environmental health (Whitmee *et al.*, 2015; Aleksandrowicz *et al.*, 2016; Afshin *et al.*, 2019; Yin *et al.*, 2020). Contextually relevant health education requires consideration of students' cultural backgrounds and everyday experiences in developing competencies to address contextual complexity and diversity of sustainability challenges (Lozano *et al.*, 2019; Pires *et al.*, 2020). To this end, we need to explore the intersections of health and sustainability with a particular focus on equity and social justice, Sustainable food and health equity include just access to food as well as the availability and affordability of nutritious foods throughout society in addressing food insecurity, as highlighted in SDG 2.1, "ensure access by all people, in particular the poor and people in vulnerable situations including infants, to safe, nutritious and sufficient food all year round" and 2.2, "eradicate all forms of malnutrition" (UN, 2015). Health education thus needs to extend beyond biomedical considerations to encompass the impact of social, commercial and political determinants for the sustainability and equity of healthy food practices (Mickelsson *et al.*, 2023).

Food is thus approached in this paper as a nuanced concept of interest for transdisciplinary research encompassing subsistence and nourishment as well as geographic, psychological and cultural factors determining how we live and relate to others (Biesbroek *et al.*, 2023; Blomhoff *et al.*, 2023). Meanwhile, nutritionism has often dominated the food discussion (Scrinis, 2013), despite how food and cultural practices have been shown to be linked in several ways (Pierrick and Torelli, 2015; Rivero Jiménez *et al.*, 2019).

Food practices include social identity and community belonging, as in how traditional foods encompass historical, geographical and social themes. Beyond nutrition, food acquires symbolic value in cultural celebrations and rituals as opportunities for cultural exchange and appreciation (Murcott, 1986; Lupton, 1994, 1996).

Sustainable food consumption links humans, animals and environments as part of a shared ecosystem, with what and how we eat affecting our health and the health of the environment. According to Reisch *et al.* (2013), sustainable food consumption involves safeguarding healthy foods through economically, socially, culturally and environmentally sustainable means, including food waste and carbon emissions. However, there is little consensus on definitions of sustainable food practices, necessitating research in diverse contexts (Reisch, 2021). Considering how healthy food is linked to health and life quality, students face a complex phenomenon, with food simultaneously key for health, identity and aesthetics (Schwartz, 2018; Afshin *et al.*, 2019; Rampalli *et al.*, 2023). Food practices are thus contextually embedded in social settings; families, local communities and peer groups and subject to internal and external forces (Dzhogleva and Lamberton, 2014; Schumacher *et al.*, 2021; Goukens and Klesse, 2022). By exploring how values and knowledge are expressed in students' discussions about food and health, this paper provides valuable insights and knowledge into an often under-researched geographical area of the Midlands region of Zimbabwe.

Côté (2006) notes how recurring tensions emerge between the freedom to choose and responsibility for those choices, with individuals expected to assume responsibility based on value claims of what is healthy/unhealthy, good and bad food practices from various

knowledge sources (Evans *et al.*, 2003). In previous research, these tensions emerge in how the rational eater is contrasted with the happy and self-fulfilled individual (Counihan and Kaplan, 2003; Jallinoja *et al.*, 2010) and how prioritizing pleasurable food practices over health risks can be seen as signalling the loss of control, resulting in feelings of guilt and ultimately undermining well-being (Lupton, 1996; Macht and Dettmer, 2006). As students are often positioned as unhealthy eaters, the tension between freedom and responsibility in food practices becomes further exasperated (Evans *et al.*, 2003). Tensions can be positioned within the dynamics of food and health as subject to social availability, political accessibility and commercial affordability, as explored in a previous paper (Mickelsson *et al.*, 2023).

Studying youth's food practices as part of efforts to achieve sustainable food consumption aligns with the emphasis of WHO (1986) on incorporating children in public health. While literature regarding children's views about what influences their food choice is limited, Waddingham (2018) shows how they are often knowledgeable about the conditions affecting their food practices. Characteristic of these social, political and economic determinants is how they include both knowledge (what is food) and value statements (how food and health should be enacted) in prescribing certain food choices for youths (Dawes and Williams, 2020; Glabska *et al.*, 2020; Mickelsson *et al.*, 2023). This highlights the complex local conditions of food practices and the need to consider the contextually conditioned values and knowledges around food youth encounter in and out of school (Hedegaard, 2016; Mingay *et al.*, 2021).

Although values constitute a central part of educational goals, deliberate values education remains an often-neglected area, with a tendency in both curricula and educational practice to focus on knowledge and overlook how it intersects with values (Bae, 2009; Østrem *et al.*, 2009; Einarsdottir *et al.*, 2015; Biesta and van Braak, 2020). As noted by Glabska *et al.* (2020), adolescents value sensory appeal and price in terms of food choices. Culturally relevant education acknowledges the importance of values and knowledges as part of empowerment (Aronson and Laughter, 2016; Byrd, 2016; Lee *et al.*, 2017). Students thus need opportunities to interrogate the cultural and social practices they are part of in developing real-world solutions to emerging challenges, with culture representing diverse knowledge systems (Agrawal, 1995; Mignolo, 2002; de Sousa Santos, 2007; Pang *et al.*, 2011; McLaren, 2015; Muriel and Singer, 2020). By considering the dynamics of social and cultural food practices and how we come to know health, knowledge pluralism can thus be operationalised in decision-making around food (Bhabha, 1994, 2002; Soja, 2010).

Aim and research questions

The paper aims to explore how values and knowledge are expressed in student's discussions about food and health.

The paper formulates two research questions:

RQ1. How are food practices in relation to individual health and the health of the environment expressed by the students?

RQ2. What values and knowledge are students expressing as part of their discussions about food and health?

Methodology

Data generation method

The paper operationalised group interviews as its data generation method, complemented by semi-structured participant observation. The latter supported the assessment of responses and interactions in the interviews, adding depth and clarity to students' discussions. The methods capture how participants express values and knowledges about food and health,

exploring how communities reflect on the why" of their everyday lived practices, thus enriching the validity of the data (Patton, 2002; Musante and DeWalt, 2010; Spradley, 2016; Fix *et al.*, 2022). Participant observation involves observing actions are *in situ* supported by a pre-prepared checklist to capture participants' verbal and non-verbal communication (Bryman *et al.*, 2022).

Around 120 students, aged 16–18 years (Forms 5 and 6), 40/60 gender split, were conveniently sampled from six secondary schools/high schools in the Midland Region and Gweru District, Zimbabwe (two urban schools, two peri-urban schools and two high-density schools). The interview guide was piloted ahead of the group interviews for comprehension and understanding by the participants and was subsequently adapted for enhanced linguistic accessibility.

Through the group interviews, students expressed themselves as Christian while simultaneously enacting traditional cultural beliefs in their food practices, specifically around eating according to their totems. As outlined by Tarugarira (2021) totemism encompasses close relationships between cultural groups and certain animals with implications for food choices. To live in peace with animals, eating the totem one is associated with thus becomes taboo (Kasere, 2010).

The interview groups of 20 students were from three school clusters: two private schools/mission schools in peri-urban areas; and four government schools, two in urban and two in high-density areas. Interviews were audio recorded and conducted in English. Supporting the semi-structured participatory observation, an observation schedule created provided a systematic approach while allowing for unexpected observations during the group interviews. One researcher taking notes led the group interview while the other researcher followed the observation schema, capturing the group's non-verbal communication. The study was conceptualised, and the interview guide and observation schema were prepared in collaboration between the Swedish and Zimbabwean teams, with the Zimbabwean team strengthening the contextual relevance of the methods used. Each group interview, lasting 60 min and moderated by two of the researchers, combined methods to allow for a co-creative space in which unexpected results could emerge from students as knowledge co-creators of contextual health. Through joint transcription of the interviews and observation notes, researchers from the two teams added further accuracy, depth and nuance to the process. Working together with the Zimbabwean team, the Swedish team drew on the conceptual framework and the outlined analytical approach in leading the data analysis.

Ethical considerations

Clearance was sought and granted by the Ministry of Primary and Secondary Education in Zimbabwe regarding conducting research focused on food and health with students under the age of 18. During initial school visits, potential participants were provided information on research aims and content with time for questions and consent forms were distributed. During subsequent data generation visits, signed consent was obtained from the students and parents/guardians, along with further opportunities for questions. Participant codes were used and no participant names were recorded (TRUST, 2018).

The research does not aim to generate data on sensitive personal information; nevertheless, our approach considered the challenges of discussions about students' food choices and practices, including avoiding students talking about their health status. Throughout the group discussions, it was reiterated that the research focus was food choices and practices rather than students' health status. In cases where the topic could have moved towards sensitive personal information, discussions were carefully moderated.

Analytical framework. Framing the analysis of students' discussions, we draw on the culinary triangle of contradictions (Belasco, 2008), previously adapted by Bohm *et al.* (2015) to

show how the relative weight of the triangle's constitutive parts are expressed in youths' food practices, with an emphasis on identity. Our choice of Belasco's triangle, coupled with an effort to develop it theoretically, was motivated by its highlighting of the dynamic between identity, responsibility and convenience. Bohm (2016) notes that the triangle should be understood holistically, with the three points overlapping in practice. We thus explored the potential of the triangle as a way to understand situational processes of food and health-related knowledges and values. To this end, we have developed Belasco's (2008) theory in terms of the intersectionality of identity, responsibility and convenience. Emphasis is thus put on the contextual complexity of food practices, which is often expressed in contradictory value-based prescriptions of individuals' food choices. According to Belasco (2008), food practices as cuisines include expressive and normative functions along with their nutritional function. The culinary triangle illustrates how eating emerges as a social practice where people show group belonging, with eating habits used in enacting identities (Belasco, 2008). Food choices and habits are viewed as deeply influenced by norms and societal structures, where food has symbolic meanings (Fischler, 1988; Lupton, 1996; Delormier *et al.*, 2009). Through the triangle, food choices are influenced by the contradictory tensions between *identity*, *responsibility* and *convenience*. *Identity* includes personal and cultural factors such as family traditions, taste and ethnic background, while *responsibility* encompasses the nutritional, ethical and environmental consequences of food choices and impacts on physical health. Finally, *convenience* considers time, resources, skills and availability, including ease of access to food sources as well as price and affordability. The contradictory character of the model emerging from these three concepts illustrates how what is considered good for the body in terms of food choices and eating is not automatically matched with taste, culture and practical concerns (Belasco, 2008). Drawing on inspiration from previous uses of the culinary triangle of contradictions allowed us to make sense of the empirical data and guided our analysis. Firstly, this included operationalising the triangle in identifying and exploring themes within our data and secondly, with the help of the identified themes and the culinary triangle of contradictions, it was found how the values and knowledge students encounter as part of belonging to various social groups and social contexts relate.

Data analytical method. Thematic analysis has been conducted to identify, analyse and report on patterns (themes) within the data. As part of the analysis of generated data, due consideration was given to emphasise and make clear the student's voices on the research topic, carried forward into the presentation of research results, supporting results with quotes. A thematic analysis offers an open and theoretically flexible approach to analysing qualitative data. It is an analytic method that searches for themes or patterns, and we chose to follow Braun and Clarke (2006, 2021) six-phase guide to performing thematic analysis. The thematic analysis was carried out in separate but interrelated steps (see Table 1).

Findings

In the findings, values and knowledges regarding food and health are expressed together in students' food choices and practices as *value-knowledges,* highlighting how knowledge about food and health (what is food and health) has normative implications for practice (how food and health should be enacted). Different ways of knowing and doing become relevant as we move through social contexts. Three primary analytical themes are identified (level 1): (1) *biomedical*, (2) *social-cultural* and (3) *sensory value-knowledge(s)*, with each theme including four sub-themes (level 2), outlined in Figure 1.

Throughout the interview and observational data, all three themes were recurring, but their relative weight shifted, with one or the other discourse taking precedent at different points. While the biomedical value-knowledge often took the role as the more dominant discourse, there were interconnections between the themes, as exemplified in the recurring

Step number	Description of the steps of the thematic analysis
Step 1	We read through the transcribed materials from the student youth's discussion multiple times, focusing on poignant statements and interesting ideas expressed by the students
Step 2	In the transcribed Word documents, we identified recurring ideas of interest using systematic colour codes
Step 3	Reviewing the colour coded documents, we compiled similar student statements and together discussed how these could form primary themes (level 1) as well as sub themes (level 2). Sub-themes we carefully extended out of the primary themes to retain coherence in the thematic analysis. Using comparative readings, we considered alternative themes and how the sub-themes related to each other
Step 4	Three primary themes of the students were identified, biomedical, social-cultural and sensory value-knowledges (level 1 themes). These were further reviewed and refined in terms of nuance into a set of four sub-themes for each primary theme (level 2 themes). Drawn together these themes and sub-themes formed a thematic "map" for our further analysis highlighted in illustration 2. As we moved forward in the subsequent steps of our analysis we drew on this map to position our results
Step 5	As part of this step, primary and sub-themes were re-checked against the empirical materials to make certain that no important aspects of the student's discussions were unaccounted for in the themes
Step 6	To provide readers with convincing arguments for our analysis, illustrative examples were selected out of the coded empirical materials. These were aimed at justifying the primary and sub-themes and to support our analytical results and conclusions. Throughout this final step, the paper's aim and research questions guided the analysis and writing of the analytical report

Source(s): Authors' own work

Table 1. Description of the steps of the thematic analysis

emphasis on identity throughout the three themes. The biomedical sub-theme of *identity as healthy person/health professional* links to the recurring emphasis on identity as part of the social-cultural sub-themes of social identity with family, culture/religion and peers, which is also present in the sensory sub-theme of *satisfaction,* highlighting how sensory food experiences have a social dimension.

Bio-medical value-knowledges

Within the primary theme of biomedical value-knowledge, as expressed by the students, the health of individuals is reduced to mechanic bodies needing nutrition to function properly (Scrinis, 2013), conceptualising the relationship to health as the reduction of health risks and the avoidance of disease, similar to the traditional medical model Haverkamp *et al.* (2018). These links between biomedical values and knowledges are expressed as four sub-themes.

1. Nutrition as good and bad food

Expressing an understanding of human health as a nutritional mechanism, students present a normative view where individuals should approach their bodies and their health by choosing the correct nutritional content needed for bodily function, exemplified in the quotes below:

> We consider food groups for example cereals and food groups, meat, fish, nuts which are the body building foods and protective foods which are the minerals. (Student 5)

> Nutrition knowledge will assist on the management of cardio vascular diseases (Student 28)

> Consider what we learnt in Food and Nutrition, Agriculture and Biology on Nutritional content of foods for example body building and protective foods. (Student 3)

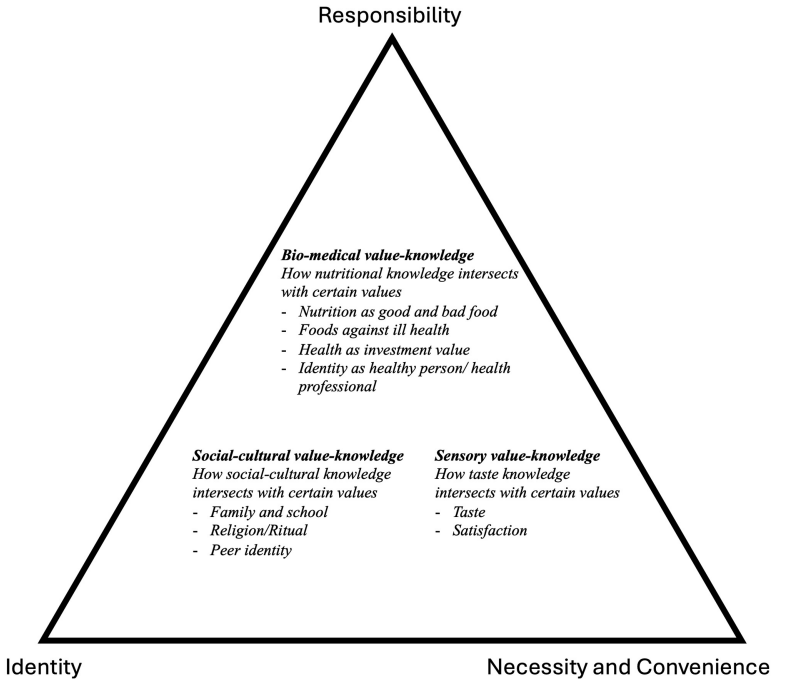

Figure 1.
Principal themes and sub-themes of health-related value-knowledges

Source(s): Authors' own work

Food choices and health are furthermore closely connected in the students' discussions to nutrition through fruits, vegetables and indigenous foods, as shown in the following quotes:

> Eating more fruits and vegetables is healthy. (Student 103)
>
> Foods cooked using boiling methods is healthy eating (Student 77)
>
> Eating less sugary, salty and fatty foods is healthy eating (Student 81)

In the quotes above, students express their *knowledge* of how eating less sugar, salts and fats is needed in order to achieve the *value* of becoming healthy, highlighting a key component of the theme. Through these experiences, students conditionally link food to biomedically healthy living, in which eating healthy can be as much about what you exclude from your food choices and do not eat based on nutritional considerations as about what you include and eat as part of your diet. To this end, achieving *valued* biomedical health goals becomes linked to *knowledge* about food as prominent in the reflective thinking and understanding of the youth of how to become healthy, as seen in the following quotes:

> When I eat balanced diet I become healthy. (Student 1)
>
> When one eats good food and exercise one will live long (Student 105)
>
> Eating more fruits and vegetables makes one to live long (Student 36)

Through their discussions of food and health in the quotes, students thus emphasise value-knowledges of being an individual (*identity*) that should make choices around food that promote living a long life and becoming healthy (*responsibility*).

Furthermore, as highlighted by the following quotes, students expressed biomedical value-knowledge by describing "healthy food" as rice, chicken and seafood, (thick porridge), sadza, milk and beef and fruit and vegetables.

> Fruits and vegetables are healthy because they help in digestion. (Student 37)
>
> White meat is healthy because it has less diseases. (Student 48)
>
> Indigenous foods are healthy because they have less fat and they will be in their natural state. (Student 55)

Meanwhile, "unhealthy food" was emphasised as being represented by ice creams, yoghurt, fish and chips, sweets, cakes and chocolates, soft drinks and junk foods, as shown in the quotes below:

> I see Fatty foods like fresh chips, crisps, roasted chicken as unhealthy because they contain too much fat. (Student 92)
>
> Refined foods are unhealthy because they do not have fibre which gives us a satiety feeling.(Student 7)
>
> Fizzy drinks are unhealthy because they contain too much sugar and they increase acids in our bodies. (Student 80)

In the quotes above, students express their *knowledge* of what is considered healthy and unhealthy foods with reference to the biomedical *value* of nutrition. Food becomes normatively linked to food habits and healthy eating, with students creating relationships with food characterised by possibilities and pressures. Discussions emphasise individual *responsibility* with students and their food choices subject to scrutiny based on value-based notions of what is healthy and unhealthy with implications for the *identity* of being healthy.

2. Foods against ill health

Biomedical value-knowledge expressed in the students' discussions presents individuals, their food choices and practices and their health in mechanistic terms of avoiding becoming sick or being admitted to the hospital. Students connect food practices and disease, as illustrated by the quotes below:

> We eat balanced food to avoid being sick (Student 39)
>
> If you eat good food there are less chances of being admitted at the hospital (Student 1)
>
> We are what we eat, if you eat healthy you will be healthy and if you eat junk food you will get ill health. (Student 74)

Food *knowledge* as a means to attain the *value* of avoiding disease and ill health becomes a subject of *responsibility* in the students' discussion, with food practices coming to define *identities*. This aligns with how a majority of the students articulated freedom from diseases and living long as primary health goals, highlighted by the quotes below.

> When I am not sick then it means I have good health (Student 2)
>
> For me to achieve good health goal I should eat well, exercise regularly and be free from stress. (Student 45)
>
> I eat a balanced diet so that I don't get sick which will make me live long (Student 29)

In the quotes, students express their understanding of food as linked to being free from disease and to not becoming sick as well as not needing health care attention and thus avoiding having to go to the hospital. Food thus comes to be linked to the *responsibility* of

eating well and having a balanced diet to promote good health and a long life and becoming a person that does not need to go to the hospital (*identity*).

3. Health as investment value

The bio-medical understandings of health illustrated above are also emergent in students' discussions that deal with food in terms of health as an investment value for themselves, family members and people as part of society.

> The education will assist my family members, even the society e.g. on maintaining ones blood sugar level or high blood pressure (Student 98)
>
> Foods with less salt and sugar prevents people from being sick e.g. hypertension and Diabetes and dental carries. (Student 56)
>
> We want to keep health so that we don't get obese. (Student 32)

In the quotes above, students express how the *knowledge* of food skills and education are linked to the *value* of a healthy life and the management of factors contributing to chronic disease as biomedical value-knowledges not just for them individually but for their families and society at large.

The *responsibility* to invest in the value of food choices and health was further emphasised by the students when, as conditions for achieving these goals, food emerges as prominent in the reflective thinking and understanding of the youth of how to become healthy (*identity*):

> When I eat balanced diet I become healthy. (Student 1)
>
> When one eats good food and exercise one will live long (Student 105)
>
> Eating more fruits and vegetables makes one to live long (Student 36)

In the quotes above, students express their understanding of food as linked to and a prerequisite for health and longevity. *Knowledge* about food choices is thus linked to the *value* of future health and long life, not just for oneself but for family and community. Food choices thus become a practice of investment where they, their families and their communities have a *responsibility* to eat well now to attain the future *identity* of being healthy and having a long life.

4. Identity as healthy person/health professional

Throughout the discussions, students position biomedical value-knowledge in relation to the *identity* of being a health professional, as seen in the quotes below:

> It's important because we want to be nutritionists (Student 36)
>
> I want to be a dietician (Student 1)
>
> I would like to take a biomedical course after my high school. (Student 120)

Students express their *knowledge* that what you eat makes you eligible to attain the *value* of certain professional *identities*. Certain (healthy) food choices are thus normatively linked to professional identities as a *responsibility* for those looking to become a nutritionist or dietician.

As part of the biomedical value-knowledges outlined in the sub-themes, the students expressed a trend of reducing bodily health into its mechanic and medical properties whose functioning relies on nutrition, thus making health a question of how best to minimise risk of disease and ill health (Lindström and Eriksson, 2005; Fassin, 2020). As illustrated through the sub-themes, health, food choice and healthy eating according to the biomedical value-

knowledges are equally about avoiding certain foods to promote health and counter ill health as about what is included in one's diet. Along with this biomedical value-knowledge, the student expresses the inclination to subscribe to best practices, striving to identify universal approaches to food choices and practices and health goals to provide evidence-based one-solution-fits-all (Tonelli, 1998; Goldenberg, 2006; Tonelli and Shapiro, 2020; Martini, 2021). The bio-medical value-knowledge is also shown to be coupled as part of the student's discussion with a pathogenic approach to food and health, where individuals are responsible for directing their food choices and practices towards reducing health risks and avoiding disease (Antonovsky, 1996). Throughout the theme, the value-knowledge expressed by students is weighted towards responsibility and identity, in which the immediate desirability and practical viability of these food practices under Zimbabwean conditions (*convenience*) have a lesser impact on the discussions.

Social-cultural value-knowledge

As part of the primary theme of social-cultural value-knowledge the students' discussions expressed a focus on the cultural knowledges of different social groups and contexts and how they influence individuals' food choices directly and indirectly. The social setting, as much as the context for food consumption and eating, I, comes to impact the food choices made. Food choices are impacted by the social context of food consumption and eating, including school, student's homes, restaurants and cafés. Four sub-themes are presented, covering different aspects of how social-cultural knowledge became connected to certain values as expressed by the students.

Family and school. Reflecting on the economic situation in Zimbabwe and how affordability becomes a determinant of daily food practices, students express how it was not always viable to choose food, and they rather had to eat what was available for the family or in the school (*convenience*), as outlined in these quotes:

> We eat what is there because our parents cannot afford what we need. (Student 7)
>
> Some foods even if we need them most of the times they are not available. (Student 61)
>
> At school I just buy what is enough for the money I have been given home. (Student 44)

As such, students' food choices and eating practices become determined by the availability and accessibility of food options at home or boarding schools. What is eaten in the family home is determined as much by what food is affordable food as what is seen as "good" food. Many of the students are provided with food from home for breakfast, lunch and dinner accordingly, as highlighted further by the quotes below:

> When am at home I just eat what has been served. (Student 89)
>
> We eat what is available at home (Student 16)
>
> Our lunch boxes are packed according to what is available. (Student 117)

In the quotes above, students express their understanding of food choices in their everyday lives due to food not being available or affordable for their families. Food is thus a way of attaining the *value* as a necessity of life, with food choices involving a *responsibility* to eat what is available or served. This means that food choices are made by necessity rather than choice, subject to someone else's decision, limiting students' ability to use food to achieve desired *identities*. Students thus create relationships with food as one of constriction where they and their food choices are subject to the conditions of the economy, food distribution system, family economy and parents' preferences.

Religion/ritual. Crucially, as part of the discussions, the youth broaden the conversation beyond nutrition by making cultural considerations in terms of food availability, i.e. not only what is eaten but also who eats, why something is eaten (or not) and where, when and with whom food is eaten, illustrated by the following quotes:

> We don't eat our totem e.g. heart of any animal, Zebra, Wilder beast, Buffalo etc.. (Student 113)
>
> My lunchbox is packed according to our norms and values (a specific totem) (Student 14)
>
> We consider cultural and religious beliefs when preparing meals (HALAAL) (Student 63)

Food is thus being linked in the student's discussion to maintaining certain *identities* and the *responsibility* of following cultural and religious beliefs. This sub-theme is further illustrated in quotes from the students on their food choices being impacted by family, culture, community and church as social, commercial and political determinants of food practices. This exemplifies how certain foods that are according to biomedical *knowledge* a good source of iron and protein, especially for youths and populations at risk of malnourishment, come into conflict with *values* of culture and thus are off-limits.

> Young people are not allowed to eat some parts of the animals e.g. liver, kidneys, heart etc, but can eat without any problem, however, it depends with the geographical area (Student 66)
>
> People are forbidden from eating their totems (Student 43)
>
> Meat from animals that chew the curd are forbidden (Student 21)

As such, the social *knowledge* of food and health expressed by the student becomes linked to cultural *values*, with food choices extending to the attainment of cultural *identity* as illustrated in the following quotes, informing what is permissible as foods.

> In Ndebele culture we ate mopane worms they are associated with the Ndebele's. (Student 43)
>
> There are certain foods which are eaten by certain people depending on the geographical area like Harurwa they are only found in Bikita hence only people in Bikita eat them because the rest don't know them. (Student 15)
>
> My culture doesn't allow me to eat mice because they feel they cause diseases (Student 76)
>
> In our culture pregnant women are not allowed to eat eggs (Student 78)

In the quotes above, students express their understanding of certain foods as being off-limits while other foods are being prescribed according to cultural and religious *identity*, linking social *knowledge* to cultural *values* and norms, including geographical area. Food is thus associated through social determinants with the responsibility to make *exclusion*s and *inclusion*s based on cultural and religious *identity*, where you are from and live. Specifically, food becomes explicitly associated and disassociated with certain totem animals. Students thus create relationships with their cultural and religious groups as ones of rules regarding what is permissible to eat and not to eat and what members of different groups consider food. Students' express *knowledge* about what animals are not considered viable food nor permissible to eat based on the *value* of cultural identity.

Peer identity. Peer culture and associated (social) media and youth peer culture emerges in the discussions as influential in addition to family and religion/ritual in impacting food and health choices in the public places inhabited by the youth, as seen in the quotes below:

> I eat healthy because I want to appear good to my friends (Student 46)
>
> We eat what our friends have chosen e.g. fast foods (Student 40)

I want to maintain my good figure so that my friends will accept me (Student 38)

At times we buy foods like chocolates, candies, etc because we feel they are classic. (Student 12)

Social *knowledge* around food practices thus becomes a way to attain the *value* of social acceptance and belonging to a peer group. Moreover, through choosing what to eat, students' express opportunities to attain *identities* associated with brands and influencers, as seen in the quotes below:

We eat healthy so as to emulate the actors who are our role models. (Student 38)

We have role models whom we will be trying to emulate hence influence our food choices. (Student 87)

Some advertisements on fast foods are appetising, that will make us go and buy. (Student 2)

Students thus express that certain foods enable them to create a community with their peers and that choosing these foods makes them part of a shared youth culture and similar to their role models. Through food, they are able to attain a youth *identity* of belonging to a group of peers and being popular. *Knowledge* of what food to choose not only becomes for the students a means of developing one's *identity* and emulating role models but also a means to be *responsible* to the peer group by being healthy and maintaining a good figure, thus appearing good to their peers and being accepted by them. Certain food choices are thus considered attractive for building *identity* and social acceptance in terms of health and in emulating role models.

Within the category of social-cultural value-knowledges, as expressed by the student, the focus is on the cultural knowledges of different social groups and contexts. Set in relation to what the student describes as sources for their knowledge about food and health, there emerges a series of determinants that constitute contextual conditions. With regards to social determinants of food accessibility, the family, with its cultural values, forms a significant knowledge base on matters of food and health at home and in certain public places such as school. In addition, the peer group emerges in the discussions as another important social determinant where students say that they choose the food their friends are having. Food thus becomes important as the social glue in the peer groups, expressing identity and belonging to said group. This identity dimension extends further, where students state that food choices and practices are linked to belonging to a certain culture. Social factors thus account for the inclusion and exclusion of viable food practices seen in the empirical material, affecting behaviour patterns expressed by the student on foods that are not to be eaten by them, their family, community or culture.

Furthermore, while the social determinants of family and peers informed the youth's food choices, enacted as food accessibility, their experienced ability to accomplish their food choices and health goals was significantly influenced by the commercial and political determinants of food affordability and availability. From our previous research (Mickelsson *et al.*, 2023), commercial affordability as experienced by the student included food costs in relation to income, while food accessibility was related to the food policies of Zimbabwe, along with natural disasters such as drought impacting food production, food sourcing and food deliveries throughout the country (Dzvimbo *et al.*, 2018). The dynamics between food availability, affordability and accessibility came to the fore when youth discussed the balance between having enough to eat and eating what they perceived as healthy food.

The findings on social knowledge and students' food practices can be seen within the context of emerging criticism directed at understanding food practice and eating as principally individual actions, with the implication that the weight and responsibility for any value attached to food choices land squarely at the feet of the individual. To create a deep and nuanced understanding of food practices, the argument goes, we need to view it as much as a

practice determined by processes in a society characterised by social, political and commercial life. As such, habits and routines become prominent and individual choices are not reducible to externally defined rational actions, but as social and cultural beings, our food practices become meaningful when seen within their contextual setting (Warde, 2016).

Sensory value-knowledges

Sensory value-knowledge as a principal theme is expressed in the student's discussions as a focus on their eating and throughout the discussions in relation to food choices and food practices and how they valued food that was appealing, providing taste, texture and appearance, impacting the palatability of the food. To cover the range of aspects the theme encompasses, four sub-themes are presented.

Taste. As seen in the quotes below, the discussions had the student emphasising the importance of taste as a major determinant of food choices, covering a range of food types from sweet foods, fried foods, junk food as well as plant-based and processed foods.

> Tasty foods is associated with junk foods. (Student 94)
>
> Foods from plant based are nutritious and tasteful. (Student 35)
>
> My family enjoy processed foods because they have good taste. (Student 41)

Food practices are thus associated with the *convenience* of readily available and processed foods, but the quotes also highlight that plant-based foods are by some considered both nutritious and tasteful.

Satisfaction. In terms of the sub-theme of satisfaction, the most poignant examples were sweet foods, which the student experienced as having a high degree of sensory appeal by providing satisfaction, satiation and pleasure, often removed from their nutritional content, as highlighted in the following quotes.

> We associate Sweet foods with pleasure and sense of satisfaction for example after eating a cake, chocolates and sweets. (Student 13)
>
> I feel happy after eating cakes because they are sweet and nice and they provide satisfaction. (Student 12)
>
> We see sweet foods as good food because we enjoy them. (Student 59)

In the meantime, as seen in the quotes below, satisfaction was also found by the student in salty fast foods.

> Salty fast foods like salted nuts and popcorns gives a sense of satiety because after eating them one needs to drink water and get full. (Student 41)
>
> Crisps are salty and after eating them I feel like drinking water hence feel full. (Student 12)
>
> Most of the time I have the desire to eat fresh chips which are salty, they give me a sense of satiety. (Student 33)

As such, food choices become something that enables the student to achieve values and aims of satisfaction and culinary pleasure. Importantly, students highlighted how not only just fast food and sweets could fill that role but also certain fruits and vegetables could provide satisfaction, as seen in the quotes below.

> Foods that provides satiation are fatty foods like fresh chips, crisps and roasted meat. (Student 82)
>
> I feel full after eating Sugary foods like sweets, biscuits, doughnuts. (Student 101)

> After eating fruits and vegetables like mangoes, pawpaw's, guavas I feel full because they have fibre. (Student 4)

As part of students expressing their *knowledge* about the various relationships between food nutrition and tastiness, the value put on indigenous and unprocessed foods by families emerged, as shown in the quote below:

> Indigenous and unprocessed foods are valued in our family (Student 3)

With the discussions covered by the principal biomedical value-knowledge theme, the discussions gathered under this primary theme highlight how tensions emerged between health goals and some of the youth's food choices. While there was evidence of the youth being aware of the benefits of what they described as "healthy" food choices, their choices regarding food differed significantly with time, place and social situation. Example quotes of situations when students ate what they themselves considered unhealthy foods include:

> When celebrating something I eat anything(Student 2)

> At times we eat unhealthy foods at home because there won't be any choice we just eat what has been prepared (Student 61)

> When we meet out as friends we have Fizzy drinks, Fresh chips, Sweets and chocolates because we rarely eat these at home.(Student 78)

The most significant difference of these was between eating with family at home and eating together with friends out or on the move, as seen in the following quotes.

> I prefer carrying cooked food when traveling because it will be fresh. (Student 1)

> I buy fresh chips and chicken (Student 42)

> I buy biscuits, fizzy drinks, sweets (Student 33)

Within the primary theme of sensory value-knowledges, as expressed by the student, the focus is on food choices and eating as a sensory experience to which students expressed attached *value*. Characteristic of these value-knowledges in the students' discussion was the introduction of taste and culinary appeal as guiding values, with eating afforded centre stage. In the quotes, food became known through taste and appeal, including texture and satisfaction guided the youth's food choices and practices. This was especially poignant when comparing food choices and practices at home with their families, with students eating out together with peers or when travelling. However, value-knowledges were not always in opposition, as certain fruits and vegetables were, according to the student, able to provide a similar combined value of satisfaction and satiation as sugary and salty foods.

Discussion

In this section, we discuss the relation between the three identified value-knowledges, including primary and sub-themes (Figure 1.), and how they come to overlap and contradict. Throughout the findings, we can see examples of how students purchase fast food for themselves and their peers because it is easy (*convenience*) and symbolizes social bonding (*identity*), while it also is a source of guilt due to negative biomedical health associations (*responsibility*). Students acknowledged the lack of nutritional content of foods with high sugar and fat content as well as the health benefits of "healthy" foods. Value provided in terms of satisfaction, satiation, fullness and pleasure occasionally overrides biomedical and cultural values in food choices and practices. Another example is sharing a dish of what is available, accessible and affordable (*convenience*) with family, symbolizing social bonding

and belonging to a shared culture (*identity*) while acknowledging how other biomedically viable foods are culturally out of bounds (*responsibility*).

Supported by illustrative quotes from the students' discussions, the analysis shows how they draw on and interrelate the three identified value-knowledges, making them part of food choices and practices. Aligning with Côté's (2006) linking of freedom of choice to responsibility of choice, a more nuanced understanding of food and health complexities emerges. Students' food choices and practices are enactments of value-knowledges that include individual freedoms, responsibilities for promoting physical health and the establishing and confirming of identity with peers, family and cultural groups. The analysis highlights how knowing food and health were not synonymous with biomedically nutritious well-being but that value-knowledges intersected as part of students' food choices and practices. This insight into how students make sense of food aligns with what has been noted in previous research (Hobson, K. 2002; Postma and Smeyers, 2012; Fischer and Barth, 2014) regarding the need for education to reach beyond providing students with prescribed and expecting certain practices.

The analysis is in line with previous research that highlights awareness about the links between food practices and health, with food choices seen as decisions in health (Schwartz, 2018; Afshin *et al.*, 2019) while simultaneously becoming valued for identity and aesthetics (Cornil *et al.*, 2020). The rational eater, focused on achieving biomedical health, is also the social eater, concerned with attaining satisfaction and fulfilment as an individual and member of society (Counihan and Kaplan, 2003; Jallinoja *et al.*, 2010). West *et al.* (2019) stress knowledge co-production research in engaging with knowledge and practice in contextually relevant ways, acknowledging the complexity introduced by cultural values. This complexity is discussed by Hatchett *et al.* (2015) as the need to integrate social justice principles and values into education as sustainable solutions for health equity. Such solutions necessitate addressing what Chandanabhumma and Narasimhan (2020) call health inequalities originating in colonial legacies and the need to acknowledge cultural identities as key in empowering communities to action for just health. The enacted value-knowledges around food and health in student discussions highlights how cultural identities are acknowledged in food choices and practice together with peer group identity, biomedical values and sensory experiences. This is exemplified by the consideration of totems in students' food choices, with them excluding certain animals as viable food sources based on cultural identity (Kasere, 2010; Tarugarira, 2021).

In line with Goukens and Klesse (2022), Block *et al.* (2011), Hedegaard (2016) and Mingay *et al.* (2021), we identified tensions regarding the goals and priorities of students' food and health practices in how the biomedical nutritional emphasis on food as a means to prevent ill health is not always compatible with the cultural-social value of family, cultural identity and peer groups or the sensory value-knowledges view food as a source of taste and culinary satisfaction. Despite students describing foods with high sugar and fat content as 'unhealthy, such foods have a high sensory appeal and higher palatability and may be consumed for pleasure rather than for nutrition. As such, the analysis highlights the competing values of social-cultural (inclusion, communal belonging as well as social well-being), biomedical (nutritional and health as investment value) and sensory (taste, satisfaction, satiation and pleasure) values-knowledges. These tensions relate to how the literature describes the prioritizing of pleasure over health risks as signalling the loss of control, resulting in feelings of guilt undermining well-being (Lupton, 1996; Macht and Dettmer, 2006). Concerning the recurring positioning of youth as unhealthy eaters (Evans *et al.*, 2003), the results illustrate how such tensions seldom emerge due to a lack of knowledge or awareness on the part of students but rather a question of competing value-knowledges. The "value" in value-knowledges are dynamic configurations of responsibility, identity and convenience, with students knowing the nutritional value-knowledge of achieving biomedical health but

simultaneously being aware of how other value-knowledges is key to living "healthy" lives with family and peer groups, developing their identities, having enjoyable experiences and ultimately also getting enough food and feeling satiated and full. To singularly draw on the biomedical value-knowledge will suit relatively few lives, and most will have to draw on other value-knowledges to live the "healthy" lives they desire while basing all our decisions for food practices on the sensory value-knowledges risks leading to unwanted health outcomes.

Conclusion

In this paper, we explored how values and knowledge around food are expressed together as value-knowledges in students' discussions. The paper makes a theoretical contribution by developing Belasco's (2008) culinary triangle of contradictions in terms of the intersectionality of identity, responsibility and convenience, emphasising the contextual complexity of food practices often expressed in contradictory value-based prescriptions of individuals' food choices. Based on this theoretical development, the papers contribute empirically with knowledge regarding students' food choices and how they utilise health-related value-knowledges, moving from home and school to expressing group belonging and identity during leisure time and in cultural contexts. There is a need to integrate social justice principles and values into education as sustainable solutions for health equity challenges, originating in colonial legacies. Cultural identities thus need to be considered and integrated in educational discussions about food and health, empowering students and their communities in socially just and equitable ways.

These insights inform global and national policy on students' engagement with food and health, acknowledging that more than nutritional facts are needed for students to live "healthy" lives. A compelling argument is presented for enabling co-creating knowledge with students around sustainable food and health equity. This indicates a shift in global and national policy away from students and their communities as (ir)rational obstacles to the implementation of policy and towards considering the students as partners in enacting health policy within their different social groups and contexts.

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