From Being Literate about Health to Becoming Capable of Achieving Health: Health literacy capabilities of Zimbabwean school youth

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Abstract

Food security is an enduring sustainability challenge in the Southern African region. Food availability, accessibility and affordability have profound health impacts and affect the quality of life of a substantial proportion of the world's population. This article aims to explore, together with students in educational settings, questions about the relationships between food and health, including the contextual conditions of food availability, accessibility and affordability. This provides opportunities to re-embody food by contextualising it as part of natural and built environments, thus engaging with how challenges of human health intersect with animal and environmental health. The research centres on co-creating knowledge with youth based on their valued beings and doings about health and considers how their health goals relate to food and the sustainability challenges of antimicrobial resistance (AMR). By considering how youths' understandings, evaluations and decisions regarding health, including setting health goals, intersect with the determinants of food, we come to consider their health literacy capabilities to achieve non-predetermined health goals that align with their valued beings and doings. As such, the implementation gap between knowing and doing is bridged through practices of health and well-being contextually grounded in the lives and experiences of the student youth.

Keywords: *health literacy, health education, capabilities approach, antimicrobial resistance, knowledge co-creation*

Introduction

Food is vital to life as the substance that, when taken by the body, provides the necessary materials to enable it to grow, replace worn-out and damaged parts, and support our everyday practices. Food choices may be affected by the conditions of the body, such as illness, chronic diseases, dental issues, famine and malnutrition. In addition, food choices are affected by determinants such as family income as well as food cost and may depend on knowledge sources regarding healthy eating, family eating habits, taste, cravings and

DOI 10.4314/sajee.v39.02
ISSN 2411–5959

easy access to junk food. These aspects link food and dietary habits to family culture, tradition, social interactions with friends and media platforms, norms, values and time to prepare food from home. Zimbabwean family food and diet habits can be considered in the light of an intersection of social, political and commercial determinants of health. For youth, food choices and dietary habits are further influenced by taste, cravings, religion, culture, education, tradition and access to information on nutrition and health. With such a range of factors affecting their food and dietary habits, there is a need for research exploring youth's health goals and food choices and how they experience social, political, and commercial determinants of health. This article responds to calls for engaging with knowledge co-production in health education and well-being by taking a praxeological approach (Mol, 2002). Focusing on youth's experiences and views as related to their health and food practices, the article explores how 'good' health emerges in the context of the youth's practices intersecting with contextual social, political and economic conditions (Entrena-Durán et al., 2021; Ehlert, 2021; Higgs & Ruddock, 2020; Robinson et al., 2013).

Exploring, together with students in educational settings, questions about the relationships between food and health, including the contextual conditions of food availability, accessibility and affordability, provides opportunities to 're-embody' food by contextualising it as part of natural and built environments (Hayes-Conroy & Hayes-Conroy, 2013). Thus, the article engages with how human health challenges intersect with animal and environmental health. As argued by Mingay et al. (2021), our relation to food and our practices with food do not emerge in individual isolation but are interwoven with our environments. We can address food security issues through the application of this kind of 'One Health' perspective in education. Food security impairs the quality of life of a substantial proportion of the world's population and is a present concern in the lives of many Zimbabwean students, as well as contributing to challenges in environmental health. This tension is especially due to efforts to secure animal-based food for a growing population, with antimicrobial resistance (AMR) being an emerging challenge at the One Health intersection (Fasina et al., 2022; Zinsstag, 2021). AMR can be described as a process resulting in microbes developing resistance to antimicrobials. The complexity of the sustainability challenge can be productively explored by considering the three-way relationship between microbes, pharmaceuticals and bodies, as well as the human, animal and environmental contexts (water and soil bodies) in which these meet, generate and spread resistance (Eleraky et al., 2020; Essack et al., 2017).

Resistance may emerge through over-prescription and over-use, and non-compliance to treatment regimes of antimicrobials in human and animal bodies, as well as the spreading of antimicrobials through environmental bodies such as rivers. The spread of resistant genes further exacerbates AMR through poor infection control in hospitals and clinics; lack of hygiene and sanitation results in the further spreading of microbial resistance throughout human, animal and environmental bodies (Palanco Lopez et al., 2020; Tompson et al., 2021). In these cases, there have been calls for a shift in efforts towards prevention to avoid spreading both antimicrobials and microbes, thus lessening the risks of exposure and

infection (Dixon et al., 2021). Central to these calls for prevention is building resilience to infection in humans through food and diet, creating (human) bodily environments conducive to beneficial relationships with microbes (Birgisdottir, 2021). This article presents research that created a space where youth, as part of educational situations, could explore a plurality of understandings of health and well-being and how such diversity can co-exist as part of situationally rational health and well-being practices. Consequently, there is an attempt to counter the marginalisation of local health knowledge and youth's health goals and experiences. As such, the research presented in this article centres on the educational process of co-creating knowledge with youth about their valued beings and doings about human, animal and environmental health and how these goals relate to food and the challenges of antimicrobial resistance (Essack et al., 2017; Tadesse et al., 2017).

AMR has emerged as a pressing sustainability challenge on a par with climate change as it poses threats to health care and impacts the interconnected health of humans, animals, and environments (Jasovský et al. 2016; White & Hughes, 2019). As such, AMR is a challenge facing future generations who will have to take responsibility for AMR and live with its consequences (Cars, 2014). As the sustainability challenge of AMR extends throughout society, impacting the lives of all citizens, including the young, AMR becomes relevant in education aiming to engage with sustainability at the intersection of human, animal and environmental health. Addressing this challenge includes reflecting on and engaging with the practices that drive resistance, including the use and prevalence of antimicrobials in human, animal and environmental bodies and practices that limit the need to introduce these pharmaceuticals into these bodies.

Furthermore, AMR emerges as a pressing topic for Zimbabwean school education in light of the emphasis on the role of education in the Zimbabwean AMR One Health National Action Plan (Zimbabwe AMR Core Group, 2017). In the plan, AMR is positioned as an essential One Health challenge that extends beyond hospitals and health care to the whole of Zimbabwean society and where education on all levels, including schooling, becomes the overarching effort in addressing this rising sustainability challenge. In addition, AMR becomes an anchor and a focus for allowing members of society, including youth, to explore and engage with the close connections between the health of humans, animals and environments. Given the One Health challenges of the country, AMR is presented in the National Action Plan as impacting on the lives of Zimbabweans, young and old, not only in terms of access to health care but also to food security and stable and healthy natural and built environments. AMR is a sustainability challenge that impacts all aspects of Zimbabwean youth's lives and their abilities to live the lives they have reason to value, making it a relevant topic and focus for education.

Through the use of health literacy capabilities theory and exploring the social, political and commercial determinants of food and health, this article aligns with previous research that goes beyond individualistic approaches (Block et al., 2011; Hedegaard, 2016; Mingay et al., 2021). Health is thus considered in terms of contextual conditions for youth to achieve their health-related valued beings and doings. This approach does not take away from

student youth's agency as individuals to explore and determine their health goals and how to achieve them. Rather, it provides opportunities for them to identify and engage with the social, political and economic contextual conditions that may affect their abilities to achieve health goals that align with their health-related valued beings and doings. A parallel can be made with climate change education and how environmental and sustainability education aims to develop student youth's abilities to engage with this sustainability challenge. While emphasising their agency, such efforts emphasise that these engagements happen under a range of social, political and economic contextual conditions that affect student youth's abilities to achieve their environmental-related valued beings and doings.

Aim and research questions

The article aims to, together with youth, create knowledge regarding their relation to health, food choices, and how these can be expressions of their ability to achieve desired health-related goals. Three research questions have been formulated:

- How do the youth describe their health-related goals?
- What links are made between these health goals and food as well as AMR?
- How has the youth experienced encounters between commercial, political and social determinants for health and effects on their freedoms to achieve health goals?

Theory

Health literacy capabilities (Pithara, 2020) are utilised as the principal theory informing the analysis as health literacy highlights the need for people to achieve competence beyond the immediate educational situation. This includes developing understandings and the ability to evaluate health information critically, as well as take action based on reflective health-related decision-making (Nutbeam, 2000; Sørensen et al., 2012; Veenker & Paans, 2016; Ward et al., 2019). As Van der Heide et al. (2013) illustrated, health literacy presents a conceptual avenue to explore the relationship between education and health and offers a way to bridge the 'implementation gap' between knowledge of health and health-promoting practices. As such, health literacy has emerged as an important educational goal, especially concerning youth becoming able to engage with the One Health sustainability challenges that impact their health, the health of their communities, local environments, and ecosystems. Meanwhile, there are calls for more significant consideration for individual agency and a less prescriptive element to health literacy through the operationalisation of the capabilities approach, encompassing critical conceptual understandings of health (Pithara, 2019; Ruger, 2010).

Both Pithara (2019) and Ruger (2010) illustrate that health literacy approaches have been limited in two ways relevant to educational efforts. Firstly, by predetermining the ways in which the student youth should become literate about health, there are risks of universalising certain lived experiences to the detriment of others. To achieve health equity,

what it means to become health literate and healthy needs to be characterised by plurality in terms of experiences, practices and contexts. Health literacy goals thus need to be part of an open-ended emergence rather than be seen as prescribed universalities. Secondly, health literacy development has often been approached as detached from the social, political and economic contextual conditions in which youth develop their health literacies.

The capability approach addresses these two limitations by shifting the educational focus towards creating conditions for student youth to develop opportunities to articulate their health literacies through an emergent plurality of health goals and with consideration for the determinants of food and health. These include social determinants such as housing and living environments, income distribution, stress, unemployment, social support, and food transportation, which are all challenges that require attention in order to achieve health goals.

Approaches to address social determinants include awareness, adjustment, assistance, alignment and advocacy (Blas et al., 2011; Dawes & Williams, 2020; Kickbusch & Franz, 2016; Ireland, 2021; World Health Organisation [WHO], 2013). In addition, political determinants encompass the impacts of human activities in both built and natural environments, such as a lack of healthy foods as well as poor ecological conditions. The structuring of relationships, how resources come to be distributed and how power is managed lie at the centre of the political determinants. Health states and outcomes of humans, animals and environments are thus significantly affected by both government action and inaction, especially in communities with limited access to resources. As such, political determinants affect all aspects of One Health (Hervey et al., 2021; Mayosi et al., 2014).

Finally, commercial determinants drive inequalities in income levels, education opportunities, occupation and employment status within a population (Blas et al., 2011). In addition, income levels shape the overall living conditions and the quality of diet in a family. Commercial health determinants are corporate actors' conditions, actions, and omissions that affect health arising in the provision of goods and services in commerce (Kickbusch, 2016; WHO, 2013). Research by Blas et al. (2011) complements what is reported in the WHO publication (2013) regarding ethics, equity and human rights, and public health programmes to complement food interventions in communities. Companies and industries manufacture commodities (food, alcohol and beverages), some of which are drivers of non-communicable diseases such as cardiovascular diseases, cancer, chronic respiratory diseases, pulmonary hypertension and occupational lung diseases, which could be related to the economy of the country (Rockström et al., 2021).

Drawing on the capabilities approach (Crocker & Robeyns, 2009; Kronlid, 2014; Sen, 2003), we can shift from health as individual skills and competencies to consider commercial, social and political determinants, which enable or inhibit youth's capability for health literacy. Health literacy principles are thus operationalised together with participating youth. Youth in the global south are disproportionately affected by health-related issues, such as food security, poor food choices and exacerbating health challenges such as cholera, TB and HIV/AIDS (Pithara, 2019, Ruger, 2010).

Within the chosen capabilities framework and applied to education engaging with health literacy, learning for health literacy capabilities is understood as enabling the conversion of resources giving youth agency and the freedom to achieve their health-related valued beings and doings (Walker, 2006; Walker & Uterhalter, 2010). There is a link between, on one hand, education and learning as capabilities and on the other hand, literacy, as the latter is informed by the prior enabling freedom and agency (Nussbaum, 2011). As such, education, learning and health are understood as crucial capabilities for well-being (Dreze et al, 2003). Nussbaum (2011) and McGarry (2014) have noted that the kind of education and learning is important as education and especially learning can be argued to be both a crucial capability in themselves, an important conversion factor, as well as 'fertile functioning', essential in developing other capabilities (Nussbaum, 2011). Consequently, learning as a transformational process becomes a pathway for comprehending, critically assessing, and even transcending new knowledge with the help of our own and others' health-related experiences (Dewey, 1997).

When discussing education and learning, Dewey (1997) argued that certain forms can arrest or distort further experience. As such, transformative education and learning aim at enabling learners' opportunity sets. Both learning and education can be seen as capabilities and as conversion factors depending on contextual conditions (Otto & Ziegler, 2006). Education can, in such situations, be understood as a condition for learning (Dirwai, 2013). Transformative learning as a capability focuses on widening the space of opportunities to realise what people value rather than for particular realisation. Knowledge thus becomes the result of practice-oriented (praxiological) co-production in which we draw on a range of knowledge sources as part of an epistemological ecology to enable ourselves to move our health and well-being practices forward (De Sousa Santos, 2007; Mol, 2002). These transformative learning processes are relational to persons, non-humans, artefacts, or collectives making such relationships potential conversion factors as opportunities for change (Grasso, 2007). As such, the article contributes insights regarding the necessity of knowledge co-creation as part of learning processes that aim to engage with the health-related valued beings and doings of student youth.

Methodology

Group interviews combined with semi-structured participant observation were used as the data generation method, operationalised in face-to-face interactions with participating youth to explore questions as part of a knowledge co-creation process. The study explored how the dynamics between commercial, political and social determinants of health impact on students' food choices and, ultimately, their health.

The chosen method captured participants' attitudes, experiences, and meaning-making as part of interactions, enriching data validity (Patton, 2002). To create a comprehensive whole, the data generation sessions included the use of both a quantitative checklist and a qualitative observation schema. These were used to capture the frequency and content of participants' verbal and non-verbal communication as part of the data generation.

Consequently, the checklist was used to create a quantitative overview of where, when and how student youth engaged with food, health and AMR, while the observation schema centred on creating depth regarding these engagements. The focus for both the checklist and observation schema was primary participants' verbal and non-verbal interactions, what they said and how they said this. Using direct observation addresses the methodological memory problem of surveys since actions are observed in situ rather than remembered by the participants (Bryman, 2019). Throughout the data generation sessions we kept in mind the point made by Emerson et al. (1995; 2001) about note-taking as a selective endeavour where a selection occurs in terms of what aspects of the interactions come to the fore and thus inherently includes a degree of interpretation.

Participating student youth came from six upper secondary schools in Zimbabwe. The selected schools included both government and private schools. Four of the schools were government-run, with two schools in urban areas (a day school and boarding school) and two schools in high-density areas (day schools), while the two private schools were located in peri-urban areas and included a private school and a mission school (both day and boarding schools)

All the schools were located in the Midlands province and the district of Gweru in Zimbabwe, but each pair belonged to three different school clusters. The population of 120 students were purposively sampled with six focus groups from each school. Students were a mix of forms 5 and 6, ages ranging from 16 to 18 years-old, in groups of equal numbers of each gender. A pre-designed interview questionnaire was used in group interviews and for participant observation, with interview questions focused on health, food nutrition, food choices, sources of health knowledge and antibiotic and antimicrobial resistance. An observation schedule was used to support the semi-structured participatory observation, which created a systematic approach to the observations while still allowing for the recording of unexpected observations during the group interviews. Each observation in the six schools followed a shared method while creating the space for the participating youth as knowledge co-creators of contextual health goals and how these could be achieved. Each group interview lasted around 60 minutes. The interviews were moderated by two of the researchers. The data generated from the group interviews and accompanying observations focused on health goals, preferences and experiences of food consumption and how youth experienced commercial and social influences regarding their food choices.

Ethical considerations

During the preparation phase before initial visits to the selected schools, clearance was sought and granted by the Ministry of Primary and Secondary Education in Zimbabwe regarding conducting research focused on food, health and AMR with student youth under the age of 18. During an initial visit to the schools, information was provided to potential participants regarding the purpose and content of the research, and they had opportunities to ask questions. Consent forms were distributed during these initial visits for the students to take home to parents and guardians. During subsequent data generation visits, we

provided additional opportunities for students to ask questions regarding the research and the subsequent process. After all questions had been addressed, we obtained written and signed consent from the students' parents and guardians as well as written assent from the youth themselves. No names of participants were recorded; instead, participant codes were used (TRUST, 2018).

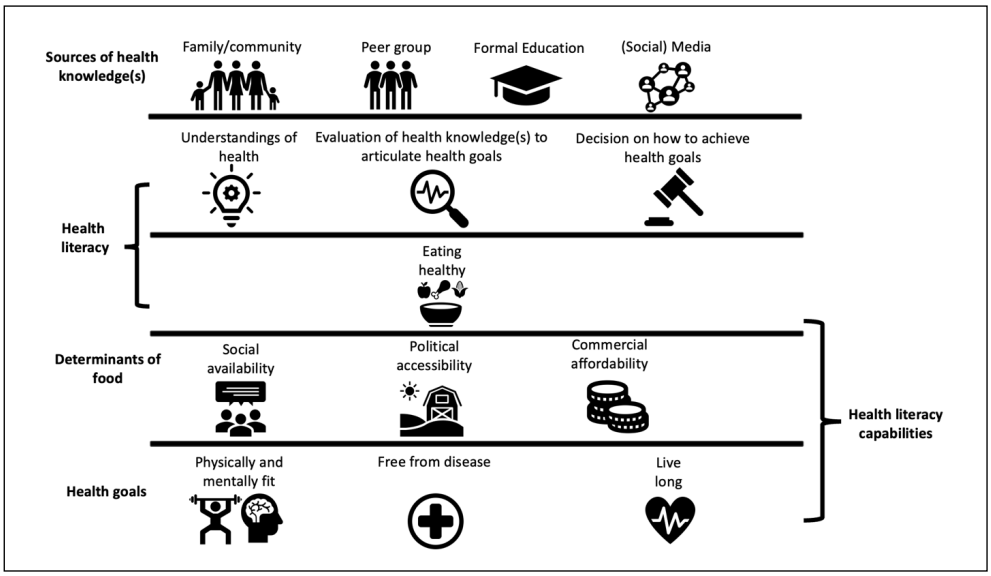
While the focus of the research was not on sensitive personal information regarding food, health and AMR, we were conscious of the challenge of dealing with questions about youth's understandings of diet and health and the need to avoid having students talk about their own personal health status. Throughout the data generation and discussions with the student youth, we made clear that our research interest pertained to their understandings of food, health and AMR on a more general level rather than their individual health conditions. At any point where the discussion moved towards touching on sensitive personal information, the researchers moderated the discussion towards more general conclusions.

During data analysis, attention was given to bringing out the student youth's views on food, health and AMR, especially with regard to how the contextual conditions of social, political and commercial determinants of food and health impacted these views. Furthermore, as part of presenting the research results, participant voices were included at key points to support and substantiate the findings.

Findings

The findings are presented through several progressive themes, as outlined in Figure 1 below, starting with the sources of health knowledge identified by the youth.

Figure 1: *From being literate about health to becoming capable of achieving health*



In the empirical materials, youth sources of health knowledge broached the formal-informal education divide with the families and communities of youth along with peer groups and (social) media forming important sources of health knowledge in addition to formal schooling.

> "…health knowledge is widely discussed in Food and Nutrition, Biology and HIV and Aids subjects. However, food and nutrition is an important subject but it's rarely found in schools, very few schools offer it."
>
> "Biology and Food and Nutrition have more topics on health, however Food and Nutrition is not done in most schools because it is an expensive subject."

As illustrated by the quotes above from the youth, health knowledge in formal sources was distributed throughout the educational curriculum particularly in science subjects such as biology and combined science, food, nutrition, and agriculture. While these school subjects all dealt with health, youth noted that each subject differed in approach and focus. For example, in biology and combined science, health and diseases were at the centre, with youth learning about biomedically healthy living conditions and how to protect themselves from diseases. Agriculture focused on the production of 'healthy' farm produce free from diseases, pesticides and antibiotics, where antibiotics were often used for treating cattle, pigs, sheep, rabbits and poultry against diseases that would affect their health and productivity. In addition, as seen in the quotes below, the youth's discussions also addressed how improper use of antibiotics may drive antibiotic resistance, having the opposite intended effect on animal health and productivity, with considerations also extending to human health.

> "When people take antibiotics at home they are told by doctors to complete the course, but they throw away the antibiotics or just stop taking them once they feel they are ok."
>
> "We have a tendency of not finishing the course and if a family member gets sick we just give the remaining medication to the sick which does not make up a course and that will cause resistance."
>
> "Knowledge on antibiotics will help us not to eat animal meat which we buy on streets and not finishing courses when prescribed antibiotics by doctors."

The focus for food and nutrition was on eating a balanced diet for sustained health, while guidance and counselling considered social and economic conditions for healthy living. Finally, health knowledge in the history and heritage subject centred on the relationship to cultural and religious practices addressing questions of norms and values. These included clean and unclean food and when and how eating food is permitted or forbidden. During these discussions, a disagreement arose regarding the norms and values of various cultural and religious practices, as illustrated in the following quotes:

> "Eating eggs while pregnant is forbidden in certain Zimbabwean cultures since they say the child will be born with a bald head without hair."

> "Various totems are animals or animal body parts for example, the heart, legs, and people are discouraged or forbidden from taking your totem… they say you will have teeth problems."

Emerging in the examples is the role of totem animals that, in Zimbabwean culture, one is forbidden from eating (Titov, 2018). As such, while health knowledge was often presented in biomedical terms as part of formal schooling, it also extended to guidance and counselling, physical education, and history and heritage.

As part of the focus group discussions, the youth emphasised the importance of family, local community, peer groups and the church as seen in the quotes below:

> "Our families have a great influence on what we eat because we have no room to choose what we want to eat at home, we just eat what has been cooked at home."

> "Religion has an influence on what we eat at home, for example, […] we are taught at church that vegetarian diet is the best so that is what I believe in. I don't eat meat as a result of that teaching."

The youth's understanding of health was thus informed and these social groups provided them with guidance on health and food concerning cultural and religious values. In the findings, the youth emphasised how:

> "Health knowledge is found in many places like churches, schools, clinics, etc."

> "At our home nothing is talked about concerning health issues, but at school and clinics."

As such, the youth made use of sources of health knowledge not as separate but as combinations of family schools, church and health facilities. Together these combinations amounted to the majority of the youth's sources of health knowledge. The remainder of the youth's health knowledge was gathered from social media (WhatsApp, Facebook and Twitter), television and radio and internet sources. The emphasis on family and community as a source of health knowledge reflects what has been noted by Känsäkoski et al. (2021), and crucially, the findings showcase how each of these sources provided different forms of health knowledge(s) for the youth. While the knowledge source of formal education provided primarily biomedical forms of health knowledge, families provided health knowledge grounded in tradition and culture, and (social) media sources offered health knowledge based on peer and youth culture of the study participants. Formal education as a source of health knowledge can further be framed within the efforts by the Zimbabwean Ministry of Education and Culture to ensure the population is educated on the importance of a healthy nation (Maravanyika, 1990; Zwane et al., 2022). As such, the youth's health knowledge did not have a single source but was drawn from an array of sources, as noted by Logsdon et al. (2018), in which youth stressed the role of their formal education, after family and community, as sources for their understandings of health.

As highlighted in the quote below, the youth expressed that the school curriculum provided sources of health knowledge that could support them in contributing to and creating more meaningful solutions to their community problems, including identifying sustainable health challenges in their local communities.

> "At school we do topics like personal hygiene, meal planning, good grooming etc. Such knowledge will help us at personal level and as a community."

In addition, knowledge gathered from the school curriculum was seen as useful by youth in navigating their everyday life and societal problems related to health. These problems encompassed technical as well as social, political and ethical dimensions, such as resolving to eat a balanced diet from selected foods in their communities. Consequently, these different sources of knowledges, with sometimes competing health claims, created a picture of the epistemological ecology in which the question was not whether a source of knowledge was truer than another but rather how they could be used in practice (De Sousa Santos, 2007). When engaging with this knowledge ecology, the youth were more like navigators, drawing on all sources of knowledge for the purpose of finding their way to their destination rather than judges in a court deciding on true or false.

Health literacy and ways to achieve health goals

Navigation by the youth comprised expressing an understanding of health knowledge on offer, evaluating this health knowledge to articulate health goals and thus arriving at a decision of how to act to achieve these health goals as illustrated in the following quotes:

> "Being healthy means one is physically fit, no mental problems and free from diseases."
>
> "Health is associated with mental wellness and free from diseases."
>
> "Free from stress and diseases."

Youth expressed physical fitness and mental well-being coupled with freedom from disease as central to their understanding of health. As a result, a shift emerged between their understanding of health and their articulated health goals, with freedom from disease emerging as prominent. As such, the youth expressed understandings of health and made evaluations of these understandings of health. Furthermore, these evaluations drew on more than the health knowledge provided in formal education as the youth also often referenced family and cultural community values as a basis for their health goals. Long life, coupled with freedom from disease, was articulated by the youth as the primary goals for good health. Physical fitness emerged often in the discussions on health goals but was curiously absent from the youth's understanding of health. A shift between the general understanding of health and the health goals of youth could also be seen in the importance given to peace of mind on a general level of comprehension of health compared to the youth's specific health goals. Furthermore, a comparison of interest could be made with what youth's families considered healthy living, where freedom from disease was

emphasised. According to the youth, families emphasised eating nutritious foods and a balanced diet and developing good personal hygiene as health goals, two less prominent areas in the discussions of the youth's own health goals. In terms of conditions for achieving their own and their family's health goals, the youth said the following:

> "Eating a balanced meal, however it's no possible due to poverty."
>
> "Avoiding the unavoidable so called junky foods."
>
> "Avoid drinking fizzy drinks and eating fresh chips and fried chicken often."

Thus, the youth emphasised eating a balanced diet and not eating junk food. The importance of food and diet emerged, especially in terms of traditional foods being a condition for freedom from disease. In the subsequent group interview, questions regarding enabling conditions for health goals shifted further into discussions on food and diet.

Health literacy, as the drawing on sources of health knowledge for health-based understandings, evaluations and decision making, is often presented as the purpose of health education, i.e., that youth should be able to make informed health decisions. Meanwhile, the empirical material and findings showcased that developing an understanding of health, articulating health goals, and how to achieve these goals were stopping short of the full learning process. Students identified health goals as being free from disease, living long lives, and being physically and mentally fit; they also acknowledged the role of food and diet as illustrated in the following quotes:

> "… if we are to live long we should have a balanced diet and exercise."
>
> "We should eat indigenous foods more often for us to live long though they are not appetising."
>
> "Living long and healthy lives we need to have peace of mind, good food and exercise."

The youths thus emphasised diet and eating healthily as conditions for achieving these health goals which where seldom straightforward.

Determinants of food

The subsequent discussions with the students showed how various factors impacted on their freedom to eat healthily and thus achieve their health goals as illustrated in these quotes:

> "Some of the factors that impact our freedom to eat healthy are that we eat what is available and not what we need."
>
> "Our mothers don't give us freedom to plan the meals; we just eat what has been cooked due to lack of resources."
>
> "We have no room to teach our mothers what, when and how to cook certain foods, e.g. heavy meals like sadza should be eaten during the day and eat mashed potatoes at night because they are lighter than sadza."

We have, in the analysis, categorised these factors as determinants of food, including social availability, political accessibility and commercial affordability, the food policies of Zimbabwe, along with natural disasters such as drought, impact food production, food sourcing and deliveries (Dzvimbo et al., 2018). In the discussion, the youth added complexity to the practice of food consumption and health, as exemplified in these quotes:

> "Things like lack of money, cultural and religious values affect the food consumption negatively."

> "At times even if we have knowledge of what to eat and what not to eat we have no freedom to do the right thing as children you just eat what you have been given and what your parents believe in since us as children have no voice."

> "Almost everyone is now a farmer in this country because everyone has backyard garden, however, lack of money to buy fertilisers and pesticides is a big challenge since it will reduce the quantity of produce."

The youth noted that food consumption was also affected by the ability of both commercial and subsistence farmers to produce enough for the country. The youth posited knowledge of food nutrition as another condition affecting good health. The knowledge of what food to eat and not to eat, rooted in the cultural and religious practices of the community, was said to affect food practices and good health. As part of the subsequent discussions, as the youth expanded on their understanding of healthy and unhealthy food, tension emerged between their understandings of healthy foods and their stated food choices and preferences. On the one hand, specific food sources were highlighted in terms of healthiness as shown in this quote:

> "Foods that are healthy are the indigenous foods like fruits (matohwe, matamba, nyii, tsubvu etc.) and vegetables (nyeve, muboora, blackjack etc.), and unhealthy foods are fresh chips, burgers, fizzy drinks, processed foods etc."

Many youths identified fruits and vegetables, protein and vitamin-rich foods and traditional foods as healthy foods, while unhealthy foods were highlighted as sweet, fatty and fast/junk foods that cause disease and refined foods lacking nutrition. They expressed awareness of the benefits of eating habits and food choices on their ability to be healthy and achieve their health goals, such as preventing getting sick and keeping themselves healthy. On the other hand, the youth also self-reported food choices in line with the following examples:

> "I usually choose unhealthy foods like polished rice, roasted chicken, fresh chips, fizzy drinks etc. However on healthy foods I like paw paws, vegetable salad, brown rice etc."

> "My favourite foods are fresh chips, fish and potato salad, I don't like vegetables at all."

Consequently, choices included both 'healthy' and 'unhealthy' foods: rice, chicken, beef, sadza (maize meal), milk, fruit and vegetables, as valid choices for the youth as ice cream, sweetened yoghurt and fish and chips as well as soft drinks.

According to Herrero et al. (2021), food and eating habits that support one's body and its needs are crucial in achieving health goals. Meanwhile, dietary considerations among the youth also included eating food for 'fun', not necessarily for nutritional benefit, often informed by social media platforms that the youth identified as sources of health knowledge, following formal education and families. The youth linked such habits to what they recognised as unhealthy eating habits, as shown in the quote:

> "Unhealthy eating habits are: eating when not hungry, skipping meals, eating too fast, eating while standing, emotional eating, under or overeating food, eating foods that are low in fibre, food high in fat, salty foods and sugary foods."

> "For most people adding salt to the food on the table is now a habit because before one taste the food they just add salt, which is a bad habit."

In addition, as part of the discussions, the youth drew on indigenous cultural knowledge and values of traditional foods to achieve health goals. The traditional foods highlighted by the youth are all found specifically in local ecological areas, such as mopani worms, flying ants, crickets, and locusts. Set against what the youth described as their sources for information on food, a dynamic of social and commercial determinants of health emerges with the family with its cultural/traditional values representing the primary source of information on health matters.

Furthermore, while the social determinants informed the youth's food choices of family and community, their experienced ability to achieve health goals through their food choices was significantly influenced by food availability, accessibility and affordability. As such, social availability in terms of what was deemed socially preferable or permissible came to play a significant role in framing the youth's food choices and thus in their efforts to translate health literacy into practice. During these discussions, the youth also indicated that the factors influencing food choices were economic, as exemplified in these quotes:

> "Food choices are influenced by factors like affordability, majority cannot afford a basic decent meal due to high cost so people end up just eating what is available, as long as it fills the tummy."

> "On the issue of food policies at least the Government should make sure that all basic foods are subsidised so that people will afford to at least buy basics like meal, sugar, cooking oil, salt, flour etc."

> "Due to floods and droughts the greater part of Zimbabwe is affected by those so people will end up being moved from their homes which leads to food insecurity."

To this end, the youth identified commercial determinants of affordability, such as cost, income and food availability, food policies, droughts and floods. Furthermore, the youth highlighted the social determinants of availability in which food choices and eating habits shifted between locations and groups as salient since their self-reported diet changed when among family or with peers, as well as the skills and time it took to cook what they considered healthy food.

Consequently, in terms of the balance between having enough to eat and eating what students perceived as healthy food, they depended on food availability (social determinants), food accessibility (political determinants) and affordability (commercial determinants). According to the youth, food consumption at the community level depended on the food accessibility based on food deliveries and transport to various areas in Zimbabwe. The transportation of food also depends on fuel accessibility, with the youth suggesting that the government needed to provide an environment suitable for all stakeholders. All stakeholders should be able to access resources to provide food for the nation. Food consumption patterns are thus affected by the accessibility and affordability of food, in addition to social availability locally. These determinants needed to be considered to assess the youth's actual capabilities to realise their health literacy, i.e., making their understanding of health relevant to their life experiences and achieving the health goals and dietary and food practices they articulated.

Health literacy capabilities

In the findings, youth expressed health literacy in terms of understanding health, evaluating health knowledge in setting health goals and deciding how to achieve these health goals. By expressing both their understanding of health and that of their families, they acknowledged that health can be interpreted in multiple ways. Furthermore, when articulating freedom from disease as a prominent health goal, the youth were not only expressing understandings of health but were evaluating health knowledge(s). This evaluation points towards a decision on how these health goals are to be achieved – through food practices, in which healthy eating was prominent in the youth's responses. This decision illustrates the impact of health knowledge from family and culture on the youth's evaluation of health knowledges into health goals, and the conditions necessary to achieve these, as the families' concept of health, in contrast to the youth's, emphasised diet and healthy eating. Food and healthy eating thus come to bridge the gap between, on the one hand, the understanding and evaluation of health knowledges, leading to health goals, and on the other, decisions and practices aimed at achieving these health goals.

As the youth discussed food and healthy eating during the focus group interviews, the Zimbabwean context came to the fore, in particular, how conditions in the country affected their freedoms and capabilities in terms of health. In this case, the youth's food capabilities emerged as linked to their overall health capabilities. This aligns with Mingay et al.'s (2021) argument for the need to acknowledge how food and health link us to people and places, as food culture and practice are more than individual concerns. Moving beyond

the recurring isolated efforts of individual behaviour change (Kobes et al., 2018; Thomas et al., 2019), this approach takes into consideration the impact of social, political and economic factors (Hedegaard, 2016). In this article, we have explored how food and health become a crucial part of our lived lives through the use of determinants of food. This shifts our attention in ways proposed by Block et al. (2011) towards capturing the social and cultural considerations regarding the role of food in our lives as well as towards engaging with health equity (Walker 2006; Walker & Uterhalter, 2010).

Therefore, the youth's ability and freedom to achieve their health literacies resulting from understanding, evaluation and decisions depended largely on the determinants of food in Zimbabwe. As we saw above, the contextual conditions in Zimbabwe can be sorted into the determinants of social availability of food, political accessibility of food, and commercial food affordability. All three determinants affect the youth's freedom to achieve their valued beings (being healthy) and doings (making healthy food choices). Expanding health education beyond health literacy to health literacy capabilities, as outlined in Figure 1, further enables us to address the tension identified in the findings between knowing and doing. This tension can be addressed by exploring how youth's understandings, evaluations and decisions about health, including setting health goals, intersect with the determinants of food. As such, we consider the youth's health literacy capabilities to achieve non-predetermined health goals that align with their valued beings and doings. The implementation gap between knowing and doing is thus bridged through practices of health and well-being that are contextually grounded in the lives and experiences of the student youth. This aligns with what Hayes-Conroy and Hayes-Conroy (2013) termed the need to re-embody food in our lives by contextualising it within and as part of natural and built environments. As such, food as a topic of education concerned with sustainability extends beyond human health, linking our health to the health of animals as well as the environmental health of ecosystems.

The fact that youth did not always, nor necessarily, choose food following their stated health goals emphasises the necessity to consider what freedoms they have to make healthy/unhealthy choices. Such considerations indicate that while the study focused on understanding health and health goals, the youth expressed additional valued beings and doings in addition to being healthy and making healthy choices that are part of living their lives, i.e., social belonging to a peer group.

Health literacy capabilities and antimicrobial resistance

The dynamics of antimicrobial resistance (AMR) in the three-way relationship between microbes, pharmaceuticals and human bodies need to be considered within the health literacy capabilities of youth in AMR education (Pithara, 2020). As noted by Haenssgen et al. (2018), relying on awareness raising in addressing AMR has significant limitations pointing to the necessity for participatory educational efforts centred around knowledge co-creation as represented by the present article. Exploring, together with student youth, health literacy capabilities can potentially engage with what Haenssgen et al. (2018)

termed the weak and ambiguous link between awareness, attitudes and behaviour that affect and inform youth's relationship to antimicrobials and resistance (Bloom et al., 2015; Leventhal, 2008; Ribera, 2011; Ocan et al., 2015). The youth emphasised that their health goal of becoming free from disease would lessen their need to visit health clinics and the potential need for and use of antimicrobials. Such considerations can be understood in terms of how development due to microbial exposure and progression of Zimbabwe's most severe infectious diseases, which require treatment with antimicrobials (TB, HIV/AIDS and Malaria), is significantly affected by diet (Chigudu, 2021; Mnguni et al., 2016; Rotheram-Borus, 2009; Hausmann-Muela & Eckl, 2015). Simultaneously, the youth highlighted how the use of antimicrobials in food and animal production, for example, dairy cattle, affected the accessibility and affordability of milk as there was a period after administering antimicrobials in which milk could not to be used for food. As such, the health and AMR educational efforts need to engage with more than individual health literacies of youth and consider how these health literacies intersect with the social, political and commercial determinants to understand what freedoms and capabilities youth have in terms of health literacy. Only then can we explore and understand youth's situated rationalities regarding choices pertaining to health and antimicrobials. Furthermore, such an approach would form the basis for co-creation, together with youth and local communities, of social innovations addressing AMR as a sustainable health challenge.

Conclusion

This article has illustrated how Zimbabwean student youth possess a deep understanding of what health can be, based on school educational background but also influenced by social determinants of health from family and community experiences and interactions. The students' and their families' definitions of health and health goals emphasised freedom from diseases, eating a balanced diet and physical fitness as key aspects of health. As such, the knowledge sources identified by the participating youth formed the basis for how they expressed understandings of health, evaluated health knowledge(s) to articulate health goals, and made decisions on achieving these health goals, i.e., health literacy. As the youth identified food as a significant condition for their health goals, the article detailed how the youth reasoned regarding healthy/unhealthy foods, their food choices and how these choices were affected by determinants of food. The family and local community, in particular, with their cultural norms and values, formed a significant social determinant and were a major source of health knowledge for the youth.

Throughout the discussions, the youth emphasised prioritisation and balance between having enough to eat and eating what was perceived as healthy food depending on the determinants of political accessibility in agricultural production and transport and commercial affordability of different foodstuffs. To this end, the article illustrated the necessity to engage health literacy as a capability in which students could set their own health goals, and address determinants of food as contextual conditions for achieving their

health goals, thus developing food and health practices that align with their valued beings and doings.

Furthermore, the youth linked AMR to their health goals through the importance of food. They acknowledged how food choices affect the risk of infection, disease and thus the need for medical care and potential usage of antimicrobials, and how the use of antibiotics in food production, such as dairy, would temporarily limit access to valuable sources of nutrition. By considering the social availability, political accessibility and commercial affordability of food in the lives of the participating youth, we have created knowledge regarding their health literacy capabilities to achieve their health-related valued beings and doings, including those relevant to addressing the emerging sustainability challenge of AMR.

From these results and discussions, a series of conclusions and recommendations can be drawn. First, there is a need to consider contextual conditions, as part of both built and natural environments, when engaging in educational efforts to develop student youth's health literacies. Without these kind of One Health considerations, the health we seek to be literate in becomes isolated from the people and social communities we share our lives with, and our health is detached from the environments we are part of and on whose health we depend. Furthermore, when addressing sustainability challenges such as AMR, education can take us further than awareness raising. It allows for the co-creation of knowledge, strengthening the often weak and ambiguous links from being aware and knowing, through developing attitudes and literacies, to establishing behaviours and engaging in a particular practice. In conclusion, when engaging with student youth, the findings support the recommendation of giving attention to the experiences, practices and values of the youth. By creating opportunities for youth to explore their valued beings and doings in relation to the intersection of food, health and AMR as topics for sustainability, there is room to move from being literate about health to becoming capable of achieving health.

Acknowledgements

The authors would like to acknowledge the valued contributions of school youth to this research.

Funding declaration

The analysis and write-up of the article for the corresponding author were funded by the Swedish Research Council through the project Living with Microbial Roommates: Health literacy capability in antimicrobial resistance education (Grant number: 2020-04567). Analysis and write-up of the article for co-authors were self-funded.

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Percentage contribution

Areas of contribution	Author	% Contribution per area, per author (each area = 100%)
Conception or design of the paper, theory or key argument	Mickelsson	50%
	Usai	10%
	Chinofunga	10%
	Oljans	30%
Data collection	Mickelsson	0%
	Usai	50%
	Chinofunga	50%
	Oljans	0%
Analysis and interpretation	Mickelsson	40%
	Usai	10%
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Drafting the paper	Mickelsson	50%
	Usai	10%
	Chinofunga	10%
	Oljans	30%
Critical review of paper	Mickelsson	40%
	Usai	10%
	Chinofunga	10%
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