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MEANINGS OF HEALTH AND DISEASE AND THEIR IMPLICATION ON HEALTH BEHAVIOURS AMONG PREADOLESCENTS AND GUARDIANS IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

This study sought to examine the meanings of health and diseases and their implication on health behaviours among preadolescents and guardians, based on existing data of an original study, which was conducted in Langata and Embakasi sub-counties in Nairobi. The study sought to identify the factors that determine preadolescents' and guardians' definitions and meanings of health and disease; to establish the meanings and definitions of obesity and non-communicable diseases among preadolescents and their guardians; and to explain the implication of meanings and definitions of obesity and non-communicable diseases on health behaviours among preadolescents and guardians in Nairobi City County, Kenya. William Cockerham's, "Health Lifestyle Theory" guided the study. The study employed secondary data analysis research to systematically investigate the meanings and definitions of health and disease in preadolescents and guardians. The study relied solely on existing data of the Kenya-Finland Education and Research Alliance (KENFIN-EDURA) project in the course of the research process. The sampling of the data sets was conducted until a saturation point was reached. Since this study adopted a qualitative approach, the secondary data from the original study's coded transcripts were analysed using the thematic analysis technique. Eight IDI and six FGD transcripts were included in the analysis when saturation point was reached. The findings of the study revealed that various factors influence people's perceptions, understanding, and practices, particularly concerning preadolescents' and children's eating habits and lifestyles. These include gender, family environments, religion, culture, maternal influences, socioeconomic status, education level of the parents and household members, as well as their living environments (obesogenic environments). The study concluded that parents/guardians, preadolescents, and other stakeholders understand the basic definitions of health and had the basic knowledge of obesity and diseases. The study recommended that public health strategies should focus on encouraging parental healthy-eating attitudes rather than simply educating parents on what to feed their children, recognizing the important influence of parental behaviour on children's practices.

Key Words: *Health, Diseases, Preadolescents Behaviours*

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INTRODUCTION

Health and disease are global phenomena of significant interest to all human societies. Over the recent decades, countries across the world have continued to witness a significant rise in the prevalence of non-communicable diseases (NCDs) that have persistently threatened the health status of their citizens as well as their economies (Adjaye-Gbewonyo & Vaughan, 2019). More particularly, NCDs have notably contributed to the continuously increasing morbidity and mortality rates in low-and middle-income countries (LMICs) (Engelgau, Rosenthal, Newsome, Price, Belis & Mensah, 2018). Existing studies have shown that the rising prevalence of NCDs is largely attributed to the ongoing transitions in health behaviours including smoking and high alcohol consumption, intake of energy-rich and unhealthy diets, as well as low physical activity. This has resulted in overweight and obesity, and an exacerbation of related chronic illnesses (Lakerveld, Woods, Hebestreit, Brenner, Flechtner, Harrington & Ahrens, 2020).

Preadolescents' conceptualizations of a healthy person and health in large have been scantly known in the extant literature. Over the past three decades, some studies had made efforts to examine children's meanings and definitions of health and disease, as well as the factors influencing and affecting them such as gender, age, anxiety, knowledge/experience, and most importantly mother's meanings and definitions (Žaloudíková, 2010). As noted by Mouratidi, Bonoti & Leondari (2016), children and preadolescents tend to perceive illness and disease based on their medical and biological characteristics. Additionally, they appeared to comprehend the emotional and social facets of illness and disease, because they often defined these aspects by referencing their accompanying feelings, and the incapacity to participate actively in social life (Mouratidi et al., 2016).

The KENFIN EDURA project was a consortium of three partners namely the University of Helsinki (coordinating institution) (Finland), Haaga-Helia University of Applied Sciences (Finland), and Kenyatta University (Kenya). The project was supported and funded by the Finnish Ministry of Foreign Affairs and was coordinated by the Finnish Agency for Education (EDUFI) and the Higher Education Institutions Institutional Cooperation Instrument (HEI ICI) program. The project aimed at enhancing the capacity and strengthening the role of institutions of higher learning in societal development in physical activity and nutrition to prevent the increasing prevalence of NCDs. This was done while enhancing the quality of the research environment and higher education through shared expertise and best practices in research and teaching. The rationale behind this was that Kenya, as one of the LMICs, is undergoing a rapid transition in lifestyle modes, with evidence indicating that the country was approaching the point where chronic diseases were starting to yield undesired health inequities between income classes and gender. Additionally, the project was founded on the position that to plan for better health promotion actions and policies, a step-in science ought to be taken from the standpoint of describing the prevailing situations, with an end goal of understanding the contemporary health behaviours and how they could be modified for the betterment of their outcomes.

To implement the project in Nairobi, Kenya, two study sites were selected; Langata and Embakasi sub-counties. These study sites were selected because they represent two distinctive socio-economic groups, with the individuals residing in these places coming from low to middle socioeconomic positions. Based on the scope of the project, a general assumption was made that individuals in these socioeconomic positions were likely to be most affected by the ongoing transitions in health behaviours, particularly toward inadequate physical activity and unhealthy diets. To establish the dietary and physical activity patterns of the study's target population, physical activity, and nutrition scientists collected biophysical data on these aspects. On the other hand, to establish an

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in-depth comprehension of the social and cultural definition, norms, meanings, and definitions associated with health, nutrition, and diseases, particularly from a sociological perspective; a triangulated qualitative approach was employed. The collected quantitative dietary and physical activity data and the qualitative data were integrated to develop empirical evidence crucial for understanding and explaining the possible role of overweight, obesity, active transport, and food and eating; in inhibiting or promoting the adoption of healthy physical and dietary habits and, their influence on health and disease in general.

Statement of the Problem

The way people in a society perceived and reflected health have a significant influence on their behavioural choices. It is important to note that, health attitudes, meanings, and definitions that are adopted throughout childhood and adolescence formed the practicalities for adult health experiences and trajectories (Felix, Voortman, Van Den Hooven, Sajjad, Leermakers, Tharner & Franco, 2014). Attitudes about health in individuals, both young and adults, are not only shaped by stages of development and age but also by the existing social and cultural attitudes; both in their societies and their generations. Evidence from the scant literature on preadolescents' perception proposed that the criteria of health beliefs, meanings, and definitions differ across the lifespan; with the criteria used by preadolescents to assess their health behaviours seeming to contrast from those of adults (Woodgate & Leach, 2010). This is because children tend to evaluate health based on immediate meanings, definitions, and behaviours (including involvement in physical activity, psychosocial wellbeing, adequate nutrition, personal hygiene, good sleep patterns, and abstinence from unhealthy habits), whereas adults assess the concept of health, centered on the presence or lack of self-limiting health issues.

It is worth noting that guardians play a critical role in the socialization of preadolescents; including influencing their health choices and behaviours through making critical decisions on their dietary and physical activity needs as well as in shaping their meanings and definitions of the concepts of health and diseases. Although the increasing prevalence of NCDs led to a growing emphasis on research into concepts of health and disease, understanding the meanings and definitions of preadolescents and their guardians of health, illness, and health promotion remain under-investigated research areas. Therefore, gaining an in-depth comprehension of the ways that preadolescents and guardians perceive health and disease in these study areas might have crucial implications for health promotion and basic prevention strategies. The purpose of this study, therefore, was to examine the meanings and definitions of health and diseases and their implication on health behaviours among preadolescents and guardians in Langata and Embakasi sub-counties in Nairobi City County, Kenya, based on the findings of the KENFIN-EDURA research project.

Purpose of the Study

The purpose of this present study was to conduct a secondary analysis of qualitative data on the meanings of health and disease and their implication on health behaviours among preadolescents and their guardians residing in Nairobi City County, Kenya, with a focused interest on deprived settings: slum and non-slum poor contexts. The study aimed at understanding how preadolescents and their guardians defined and perceived health and disease through aspects such as physical (in) activity, dietary patterns and variability, body image, and overweight/obesity as depicted in the data of the parent study.

The study was guided by the following specific objectives;

- To identify the factors that influence preadolescents and guardians' meanings and definitions of health and disease in Nairobi City County, Kenya.
- To establish meanings and definitions of obesity and non-communicable diseases among

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preadolescents and their guardians in Nairobi City County, Kenya.

- To explain the implication of the meanings of obesity and non-communicable diseases on health behaviours among preadolescents and guardians in Nairobi City County, Kenya.
- To suggest recommendations on how contemporary health can be modified for the betterment of health outcomes for preadolescents and guardians

LITERATURE REVIEW

Conceptualization of Health and Disease

For many decades, researchers have observed how people's meanings and definitions of health and disease influenced their health behaviours. The structure and contents of health and disease reflected coherent theories in which people's health-related understanding is integrated and how it served as a guide in coping with health challenges as part of dynamic self-regulatory processes which occurred over time (Benyamini, 2011). According to the author, individuals' meanings and definitions of health and disease were not often medically accurate; nevertheless, they were internally logical and rational from the individual's subjective standpoint. As noted by Ferrer & Klein (2015), health meanings and definitions were formed based on a range of sources that were not chastely medical and act as the objective reality that influences an individual's behaviours and health outcomes.

Evidence from existing literature had pointed out the implications of varying meanings and definitions of health and disease, both to individuals and to societies as a whole. Hanson & Gluckman (2015) noted that an individual's perception of health is as accurate as possible in guiding their conduct in the desired direction and that when a society has a deceitful perception of what health was, it could have a negative influence on the health of its people. Additionally, it is argued that if people's meanings and definitions of health and disease were dissimilar to the truth, then their behaviours and actions will not improve their health, and could worsen it (Hanson & Gluckman, 2015). Generally, the comprehension of the definitions of health and disease as social constructs included the acknowledgment of the fact that a person's interpretation of these facets is widely influenced by their sociocultural statuses (including culture, family, media, peers, and religion), socioeconomic status (income, employment, and education), as well as their environment (social, political, geographical) among other factors (Constantinou, 2019).

The role of culture in influencing people's worldviews on health, illness, and disease had been acknowledged in the existing literature. In a study to explore the Konso people's health and illness meanings and definitions, Workneh, Emirie, Kaba, Mekonnen, & Kloos (2018), found that the worldviews of the Konso people, especially regarding health, disease, and illnesses, were closely associated with their day-to-day lives. The authors noted age differences in meanings and definitions, with older persons believing that diseases emerge due to different supernatural forces, such as the wrath of local gods of God, ancestral spirits, and spirit possessions and they used culturally recommended treatments for illnesses. The young Konso people on the other hand, who are formally educated, attributed the aspects of health, and causes of diseases to bacteria and germs, and tend to seek medical treatment in healthcare facilities (Workneh et al., 2018). The findings of this study reflected how individuals from local communities perceived and understood health problems and elucidations within their cultural frame of reference, including religious and socio-cultural factors. These findings lay a foundation for the exploration and understanding of the meanings and definitions of individuals on health, illness, disease, and illness, within different social and cultural contexts.

Evidence showed that more than one-third of the population in LMICs lack adequate access to biomedical health services, and often relied on self-

care and/or traditional medicine. In their study, Kahissay, Fenta & Boon (2017) examined the meanings, definitions, and beliefs of ill-health causation among indigenous communities in North-Eastern Ethiopia. The findings from their study revealed that in indigenous communities, the aspects of health and illness were perceived to have natural, supernatural, and societal causes. Similar to Murdock's model Kahissay et al (2017), noted that there were various meanings and definitions of the causes of illness with the majority of the indigenous people associating it with the wrath of supernatural powers as well as shared meanings and definitions and beliefs; regarding natural causation of diseases such as lack of nutrition or an infection. Just as the study by Workneh et al., (2018), this study focused on the meanings and definitions of health, illness, and disease among rural indigenous communities. This reveals a dearth of literature on the meanings and definitions of health and disease among urban slum and non-slum-dwelling communities and how they influence their health behaviours and outcomes. Owing to this gap in the literature, the proposed study sought to examine the conceptualizations of health and disease and how they influenced their health behaviours, particularly among preadolescents and their guardians residing in an urban setting in Nairobi City County as discussed in subsequent subsections

Conceptualization of a Healthy Person among Preadolescents and Guardians

The conceptualization of health as the balance between an individual and the environment; the unity of the body and the soul; as well as the natural causation of disease has been perceived as the foundation of the perception of health and disease in communities (Svalastog, Donev, Kristoffersen & Gajović, 2017). The description of a healthy person is not cast in stone and varies across different meanings and definitions of health among individuals. Although there is scant current literature on the concept, existing evidence indicated that the lay meanings and definitions of a healthy person appear to be described by three qualities: pragmatism, wholeness, and individualism (Downey & Chang, 2013). According to the authors, the "wholeness" perspective of a healthy person comprises interwoven aspects of an individual's life including everyday life, family life, work life, and his/her community life. Additionally, it is argued that the absence of a disease in a person is not a sufficient criterion for ruling out that they are healthy, but rather their life situations as a whole must be considered (Ajima & Ubana, 2018).

From a pragmatic point of view, the health status of an individual is determined and evaluated based on what other people found realistic to expect, given their medical conditions, age, gender, and social circumstances. As noted by Svalastog et al., (2017) a healthy person was a person who was realistic in his/her life expectations and not necessarily free from disease or loss of functional capacities, since other positive aspects of life could always compensate for varying types of losses. Lastly, the perception of a healthy person from an individualistic perspective denotes the depiction of health as a significantly "personal phenomenon" (Svalastog et al., 2017). In this case, individualism implied that the meanings and definitions of health relied solely on who an individual was as a person. This is based on the notion that every individual is unique and that values and strategies for enhancing health outcomes must be individualized to realize the desired health status. These depictions of a healthy person highlight the plurality of descriptions of a healthy person within a wide range of contexts within which health and diseases were elaborated. Based on this fact, it was, therefore, important to understand the meanings and definitions of preadolescents and guardians of the description of a healthy person. This is particularly significant in formulating strategies and health campaigns that are steered towards encouraging individuals, especially preadolescents, to modify their mindsets about health and healthy behaviour.

In a study to investigate how nursing students in Scandinavian countries and Indonesia describe a

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healthy person, Høye et al., (2016) revealed that the characteristics of a healthy person were described as involving the inner and external balance of health aspects. There is no doubt that the external and internal factors of health could not be experienced separately: since they exemplify the wholeness of a person's appearance and self-image. According to Høye et al., (2016), the inner balance of health consists of facets such as being in control of one's health, positive self-esteem, inner harmony, and feelings of coping and wellness. External balance on the other hand comprises grounded rules of life linked to specific cultural norms, self-presentation, having a strong physique, coping with challenges, and partaking in activities (Høye et al., 2016). The findings of this study illustrated the meanings and definitions of youth regarding a healthy person to include being strong and having an attractive body, regardless of a person's socio-cultural and economic background.

Preadolescents ' meanings and definitions of a healthy person and health in large had been scantly known in the extant literature. Over the past three decades, some studies made efforts to examine children's meanings and definitions of health and disease, as well as the factors influencing and affecting them such as gender, age, anxiety, knowledge/experience, and most importantly mother's meanings and definitions (Žaloudíková, 2010). A study by Mouratidi, Bonoti & Leondari (2016) showed that children and preadolescents tend to perceive illness and disease based on their medical and biological characteristics. Additionally, they appeared to comprehend the emotional and social facets of illness and disease; because they often defined these aspects by referencing their accompanying feelings, and the incapacity to participate actively in social life (Mouratidi et al., 2016).

There is no doubt that children and preadolescents are capable of giving acceptable definitions of health and disease from an early age and can identify their varying dimensions. As noted by Eiser & Kopel (2013) and Youssef et al (2010), children formed these understandings and meanings, and definitions based primarily on their knowledge and personal experiences, and social representations in consistence with the prevailing cultural and social trends. According to Žaloudíková (2010), preadolescents' meanings and definitions of health and disease had been categorized into three primary categories namely; psychosocial, biomedical, and representations of a healthy lifestyle. These classifications are in line with WHO's categories as specified in its definitions of health (Hariharan et al, 2019).

This evidence indicates that the potential of children and preadolescents to be used as change agents in health practice and research needs to be increasingly valued, particularly in slum and non-slum urban contexts in LMICs, whereby limited studies had been conducted. To attain this objective, this study seeks to gauge preadolescents' meanings and definitions of health and disease, by exploring the meanings and definitions of preadolescents and their guardians of a healthy person in Nairobi City County which, to the researcher's knowledge, had no specific studies on the topic. This study forms a basis for future pathways to disease prevention and health promotion strategies. The subsequent sections review the literature relevant to the meanings and definitions of children and guardians of two specific health-related aspects namely overweight/obesity and non-communicable diseases.

Meanings and Definitions of Obesity among Preadolescents and Guardians

The WHO and the Centers for Disease Control and Prevention (CDC) have identified obesity as an epidemic, with its rates among young children and preadolescents having tripled over the past four decades to approximately 15% (Appleton, Fowler & Brown, 2017). Physical inactivity and poor diets had been identified to be the basic modifiable contributors, responsible for the upsurge of obesity among children (Robinson & Sutin, 2017). Childhood overweight and obesity are recognized to be associated not only with related comorbidities in

preadolescence but also in later stages in life, such as diabetes, hypertension, and depressive disorders among others (Wu et al., 2021). Nemecek et al (2017) indicated that children with overweight and obesity issues more often experience activity restrictions, poor health status, and school problems.

A growing body of research is increasingly measuring public attention, attitudes, meanings and definitions, and awareness about childhood obesity. However, more keen interest is being focused on the meanings and definitions of parents and/or guardians and children of childhood obesity and overweight issues. According to Nemecek et al., (2017), parents' and guardians' meanings and definitions of obesity as a contemporary health concern for their children are significant for the day-to-day choices that they make regarding their parenting and children's health choices. As noted by the authors, understanding parents' and/or guardians' awareness, attitudes, beliefs, meanings, and definitions of childhood obesity, was significant in the establishment of any obesity intervention and prevention strategies.

In a study to examine the meanings and definitions of mothers regarding childhood obesity, Kim, Kim & Park (2015) observed that weight is a phenomenon that is influenced by an individual's sociocultural background and therefore, exploring the meanings and definitions of mothers towards excessive weight gains and obesity in children was significant in their prevention and management. The findings revealed that in the traditional Korean context, overweight, in general, was perceived as a pictogram of good health, wealth, and luxury. The consequence of such meanings and definitions was that parents and/or guardians of children and preadolescents, who grew up in contexts that hold such meanings and definitions, could not be freed from them either. It was also indicated that these meanings and definitions influenced how children perceived overweight and obesity (Kim et al., 2015).

Existing evidence has shown that parents' recognition of their children as obese could be an integral prerequisite for addressing childhood obesity. However, the findings of a study by Robinson and Sutin (2017) revealed that parental recognition of their children as obese was counterintuitively linked to increased weight gain during preadolescence. Using data from longitudinal studies, Robinson and Sutin (2017) concluded that children whose parent (s) and/or guardian (s) perceived them to be overweight were more probable to interpret their body weight negatively and were more likely than others to be actively attempting to lose weight. These findings indicate that parents and/or guardians' meanings and definitions of overweight and obesity in children play a key role in influencing their health behaviours, including nutrition and physical activity.

Although scantly documented, existing evidence showed that healthy behaviours and solid meanings and definitions of the concepts of health and disease, including overweight and obesity, started to develop during childhood and preadolescence periods. These meanings and definitions are highly influenced by social, cultural, and environmental aspects including families, nurturing contexts, as well as existing public health policies (Eiser & Kopel, 2013). A study by Rendón-Macías et al, (2014) showed that the negative meanings and definitions of overweight and obesity emanated from early life stages, with many children being cognizant of the negative health outcomes of obesity, particularly those who experience it individually, or through the close guardian figure. Additionally, the authors observed that most children recognized that being overweight and obese created limitations on a person's performance, an aspect that had been proven functionally true, regardless of age, ethnicity, and gender (Rendón-Macías et al., 2014). Overall, such meanings and definitions were critical in understanding preadolescents' and guardians' involvement in efforts aimed at mitigating the continuing rise of obesity incidences among children and adolescents and in the realization of the global sustainable development goals (SDGs).

In the past years, childhood obesity was perceived to be a problem for industrialized societies. However, with the ongoing health transitions, childhood overweight and obesity became a growing problem in LMICs (Rendón-Macías et al., 2014). Even so, limited studies had been conducted to explore the meanings and definitions of obesity in preadolescents and guardians in developing countries, particularly in the Sub-Saharan African region, including Kenya. Most current studies on childhood overweight and obesity in Kenya are just predictor and prevalence studies, with little being known regarding how these phenomena are being perceived especially by preadolescents and guardians. Little is also known about how such meanings and definitions shape health-related behaviours such as eating healthy diets and engaging in physical activity as ways of curbing the growing problem of obesity among children. Owing to these gaps in the existing body of works, therefore, this study sought to examine the meanings and definitions of overweight/and or obesity among preadolescents and guardians in Nairobi City County.

Meanings and Definitions of Non-Communicable Diseases among Preadolescents and Guardians

Addressing the growing burden of NCDs became a global priority in the SDGs, especially for children and adolescents (Akseer et al, 2020). NCDs denotes diseases that cannot be transmitted from one person to another including the commonly existing types such as; diabetes mellitus, hypertension, cancers, chronic respiratory disease, cardiovascular disease, and injuries (Shorey & Ng, 2020). A study in Sri Lanka showed that the level of knowledge of NCDs among children and adolescents was significantly low, with their meanings and definitions of the diseases and associated preventive practices being based on abstract beliefs (Gamage & Jayawardana, 2018). In a study by Daniels et al (2016), it was found that school staff and parents shared a holistic perspective of children's health and NCDs and agreed that a range of interconnected factors; including individual, social, cultural, economic, and environmental influence the health of preadolescents. As a result, in the tailoring of health-promoting and NCDs prevention programs, it is crucial to consider the attitudes, pre-existing knowledge, and meanings and definitions that both children and parents/guardians have and the contexts in which such interventions would be implemented.

In their study, Hariharan et al (2018) noted that preadolescents' conceptualization of hypertension was both complex and inadequate. Very few children in the study were able to identify the causes and consequences of hypertension; as well as its management. The authors argue that children's and adolescents' meanings and definitions of illness and disease were drawn primarily from the notions that they gain from the media and school. Additionally, the study revealed that children held several misconceptions regarding aspects associated with hypertension; with most children perceiving the disease as a disease of old age (Hariharan et al., 2018). Such misconceptions and false meanings and definitions of hypertension as a type of NCDs should be dissipated since they could be potentially detrimental to their health behaviours.

From the existing evidence, although scanty, it is clear that health behaviours established during childhood and adolescence stages have lasting effects on the onset of NCDs. Based on the Health Belief Model, when children and adolescents do not remark their susceptibility and vulnerability to the condition, they could not indulge in precautionary lifestyles. This raises apprehension as the prevalence rates of prehypertension and hypertension have been increasing in children's populations at a rapid rate. Therefore, there is a growing need to explore and understand the conceptualization and perception of children regarding NCDs. To the best of my knowledge, there are no specific studies that explore the meanings, definitions, and knowledge of preadolescents and guardians regarding NCDs in Kenya, especially in Nairobi's slum and non-slum dwellings. Owing to

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the emerging literature gap and significance of the issue, it was essential to explore and understand preadolescents' and guardians' knowledge, meanings, and definitions of NCDs, intending to add the much-needed literature in the development of NCDs preventive programs, especially among children and adolescents. This study, thus, sought to examine the meanings and definitions of NCDs among preadolescents and guardians in Nairobi City County.

Theoretical Framework

William Cockerham's "Health Lifestyle Theory" (Cockerham, 2017) guided this study. The theory was developed by Cockerham in 2005 and was founded on the classical works of the German Sociologist Max Weber (1978) and the French Sociologist Pierre Bourdieu (1984). According to the theorist, health lifestyles depicted the collective forms of health-related behaviour that were founded on choices from options available to individuals as per their life chances (Cockerham, 2017). The basic tenet of the theory is that healthy lifestyle choices are not separate random personal choices, but rather cluster in different patterns based on gender, class, and other structural factors. Concisely, the theory reiterates the way through which structural aspects such as class situations, socioeconomic statuses, gender, age, race, ethnicity, living conditions, and social networks (collectivises) provide the social settings for experience and socialization that eventually determine individuals' lifestyle practices and dispositions.

In relevance to the study, health and disease patterns, meanings, and conceptualizations are not inadvertent but are rather levied socially and culturally through top-down socialization processes. Individual experiences that enforce awareness of the variety of choices available to people and the socially outlined protocols of selecting them come into play as well. Health behaviours, meanings, and definitions shape the well-being and health statuses of individuals in a society and are increasingly acknowledged as multifaceted and entrenched in healthy lifestyles. Such lifestyles vary across places and over the life course, thus reflecting the interaction between structure and agency that demands the situating of people in a specific context. The structure and contents of health and disease reflect coherent theories in which people's health-related understanding was integrated. It also showed how it served as a guide in coping with health challenges as part of dynamic self-regulatory processes, which occur over time. In this view, therefore, this study sought to explore the meanings and definitions of health and disease among preadolescents and guardians and their implication on health behaviours and lifestyles, in urban slum and non-slum contexts of Nairobi City County.

Conceptual Framework

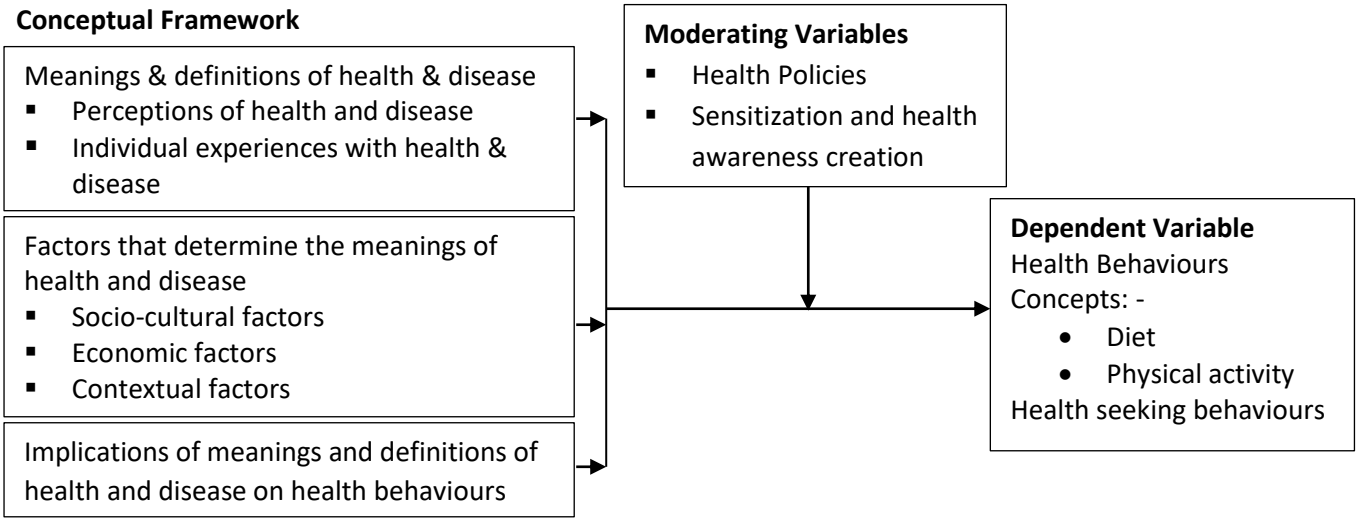

Figure 1: Conceptual Framework; Source-Researcher

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METHODOLOGY

The study employed a secondary data analysis research design to systematically investigate the meanings and definitions of health and disease in preadolescents and guardians. The study relied solely on existing data of the KENFIN-EDURA project in the course of the research process. The secondary analysis strategy that was used in the study is the retrospective interpretation strategy through which the secondary researcher explored unanswered or new research questions from the database, which were not exhaustively explained in the original research (Thorne, 2013). This research design involved the organization, collation, and analysis of this data set for valid research conclusions on the topical research problem. Heaton (2008) recommends the outlining of the parent study, including the data collection and analytical processes applied.

The study adopted a cross-sectional qualitative descriptive research design which was significant in obtaining a general picture of the study issue as it stands during the time of the study and concerning the targeted study population (Lewis, 2015). The current study used secondary analysis of the primary qualitative data approach whereby the researcher framed the study within the characteristics and assumptions of the primary qualitative data obtained in the original research. This included fundamental features such as an evolving strategy, the demonstration of multiple realities, and most importantly, a focus on the views of the study participants as presented in the original study data (Creswell & Poth, 2016).

The study was conducted in the Langata and Embakasi sub-counties of Nairobi City County, which were the study areas of the KENFIN-EDURA project. These areas were selected since people who reside there are from low to middle socioeconomic positions. People in these socioeconomic positions are likely to be the most affected by the transition in health behaviour; toward an unhealthy diet and inadequate physical activity (DiPietro, Al-Ansari, Biddle, Borodulin, Bull, Buman & Willumsen, 2020). Moreover, the overall project's research team had previous experience in these areas and thus good connections to the community health workers, which enhanced participation and data collection.

The target population for the study constituted families in low or middle SES with preadolescents in the age range of 9 to 14 years old and their guardians, residing in the selected study regions - Langata & Embakasi, Nairobi County. The target population of the proposed secondary study was also guardians and preadolescents in the study locations of the original study.

The present study included qualitative data on meanings and definitions of health and diseases of the pre-adolescent and guardians; mother and/or father if both belong to the family and regardless of whether they are biological parents or not, that was present on the available data sets. The main inclusion criteria used in the original study was that the family had at least one pre-adolescent aged from 9 to 14 years of age and at least one parent or guardian available, and who had been residents of Langata or Embakasi for 6 months before the study. Moreover, the family had to sign an informed consent, hence be a volunteer participant. Regarding the parent study's exclusion criteria, households with a pre-adolescent 9-14 years with documented chronic disease conditions, such as tuberculosis, affecting diet, or those who have any significant illness that would have prevented their participation, were excluded from the study.

The sampling for the study was conducted in two stages in both Embakasi and Langata study areas. The first stage involved the selection of neighbourhoods while the second involved the random sampling of households within the selected neighbourhoods. In both study areas, household lists from each of the randomly selected neighbourhoods were obtained for the identification of the households that would be most suitable for the study. From these lists, 100 households were randomly selected in both areas and recruited for the study by health community

workers based on the study's inclusion criteria; and those who voluntarily agreed to take part in the study. Owing to the qualitative nature of the original study, participants from the randomly selected households were purposively sampled. This sub-sample consisted of parents, caregivers, and children, who participated in Focus group discussions (FGDs) and in-depth interviews (IDIs).

The current study used existing secondary data from original research by KENFIN-EDURA. The study employed secondary qualitative analysis to assess the meanings and definitions of health and disease in preadolescents and their guardians. The original research project kept detailed records that reflect consistent and careful data collection procedures. It is important to note that the original survey research employed triangulated primary qualitative data collection techniques namely; focus group discussions and in-depth interviews.

This study utilized in-depth interviews from the parent study which were conducted with guardians, particularly mothers and preadolescents. For these interviews, semi-structured interview guides were used. In the parent study, the interviews were conducted with the mothers or guardians from purposively sampled households in the study areas. Fifteen (15) in-depth interviews were conducted with participants from both study areas. This tool was particularly significant in investigating the social and cultural meanings and definitions, norms, and beliefs of the preadolescents and their guardians regarding health and disease. For this secondary research, the researcher used data from eight interviews conducted in the original research. The rationale for this was to maximize both the quality and quantity of data drawn from the parent study.

In addition to the in-depth interviews, the current study also utilized data from focus group discussions (FGDs) conducted in the parent study on the conceptualization of health and disease among preadolescents and guardians. In the parent study, twelve (12) FGDs were conducted. Each focus group discussion had six participants. The FGDs were made up of guardians, who were identified using purposive sampling to single out participants from the households who had the information that the study was seeking. The purpose of the FGDs was to develop an understanding of the role of cultural norms and values, as well as family in changes in health behaviours. The research team obtained informed consent from the household heads and the guardians/caregivers to participate in the study after which the data collection process would proceed. Even so, in instances where the secondary data contain identifying information or participants' particulars, the researcher in the current study sought informed consent; whereby indications of means of protecting the confidentiality and privacy of the participants in the original research were provided (See Appendix I). Moreover, consent to record audio and videos of the proceedings for the discussion was sought from the discussants. In these discussions, an FGDs guide was used (see Appendix III). For the current study, the researcher used data for six FGDs from the mother study, three from each study area, to answer the research questions. The data for the six FGDs was selected based on the extent to which it was relevant and adequate in answering the current study's research problem.

The current study utilized the transcribed and coded data from the original study. In the parent study, the audio files of the focus group discussions and qualitative interviews were transcribed into text to facilitate coding and analysis. The transcribed files were then coded and analyzed using MAXQDA qualitative data analysis software. The data was encrypted and password protected. More specifically, the data were analyzed thematically using the constant comparison technique of reading and re-reading the interviews and FGDs transcripts to identify the patterns consistent with the objectives of the study. As mentioned earlier, this research was part of the KENFIN-EDURA research project and therefore, the researcher has sought explicit permission from the research team to use their data. Since this study

adopted a qualitative approach, the secondary data from the original study's coded transcripts were analyzed using the thematic analysis technique. The purpose of the secondary analysis was to address some questions regarding the meanings and definitions of health and disease in guardians from the original data that was not exhaustively used by the parent study. The secondary analysis strategy that was used in the study is the retrospective interpretation strategy through which the secondary researcher explored unanswered or new research questions from the database, which were not exhaustively explained in the original research. This research design involved the organization, collation, and analysis of this data set for valid research conclusions on the topical research problem. The findings from the secondary analysis will be presented in the form of choice quotations and themes.

In the management of the secondary data, the secondary analyst researcher obtained all the protocols followed by the original researchers including; interview and focus group discussion guides, all the data coding materials, coded transcripts, as well as other publications that were associated with the data in question. Most importantly, the secondary analyst researcher requested access to the raw data from the primary researchers to carry out new analyses, especially where there were concerns about missing responses or bias. The accessed data sets, documentation, and protocols were stored electronically with restricted access to protect the data.

FINDINGS

The findings of the study were based on the secondary data obtained from the KENFIN-EDURA research project. The findings of the secondary qualitative analysis are discussed and linked to the research questions while exhibiting the reliability of the analysis to the study's qualitative methodology. The findings of the study were presented as per the study objectives. The overall goal of the study was to examine the meanings and definitions of health and diseases and their implication on health behaviours among pre-adolescents and guardians in Langata and Embakasi sub-counties in Nairobi City County. Qualitative data from in-depth interviews and focus group discussions from the parent study were analyzed thematically. The specific objectives of the study were:

- To identify the factors that determines preadolescents and guardians' meanings and definitions of health and disease in Nairobi City County, Kenya.
- To establish meanings and definitions of obesity and non-communicable diseases among preadolescents and their guardians in Nairobi City County, Kenya.
- To explain the implication of the meanings of obesity and non-communicable diseases on health behaviours among preadolescents and guardians in Nairobi City County, Kenya.

In line with the writings of Anderson (2010), the findings of the study are presented in the form of selected quotes that are most representative and/or poignant of the research findings.

Factors that Determine Preadolescents and Guardians' Meanings and Definitions of Health and Disease

The first objective of the study was to identify the factors that determine preadolescents' and guardians' meanings and definitions of health and disease in Nairobi City County, based on the findings of the KENFIN-EDURA research project. Under this objective, the study sought to identify the lay meanings and definitions of health and diseases as well as the factors influencing these conceptualizations. Three key themes emerged from the analysis, including the socio-cultural, economic, and contextual factors that influenced the meanings and definitions of health and diseases among preadolescents and guardians as discussed below.

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Preadolescents and Guardians' Meanings and Definitions of Health and Disease

To a larger extent, the concept of health and disease has been perceived to related to food and dietary behaviours. Most participants in the study perceived and understood health problems as emerging due to food related aspects. In Kayole, Embakasi Constituency, the study participants mentioned that health problems and diseases could be caused by an array of factors, but mainly by people's food habits. According to a sports representative interviewed in the parent study, food is the key determinant of health. As stated,

> "Food defines health … Now depending on the food someone eats … one can eat some types of food and grow obese or even get some mysterious diseases. To this point, I will say that food is health." [KII_Community Sports Rep_Kayole, Pos. 72-73]

Another FGD discussant stated that,

> "These diseases come from the food that we eat and how we eat food. Health comes from food" [FGD_Adult Men_ Kayole, Pos. 141]

When asked who they think a healthy person is, a respondent noted that it is a person who is free from some diseases.

> A healthy person is a person free some diseases and alike." [KII_Sub-County Nutritionist_Kayole, Pos. 43-44]

A caregiver in an in-depth interview narrated that he understood a healthy person as a person who keeps fit and not too obese nor slender and eats well. As narrated.

> "According to me, a healthy person is one who keeps fit and is not so fat nor too thin … he or she is just health even when he or she is walking you will see that they are strong. And of course, he or she eats healthy food." [IDI_Caregiver_Kayole II BC 2i, Pos. 65]

In Langata, similar perceptions were highlighted by the study participants. According to a participant in a focus group,

> "Let us say the health of a person depends on the kind of food that they eat. Food is what makes ones body to be healthy or unhealth, and this depends on how one controls their eating patterns." [FGD_ Adult Men_ Lang'ata2, Pos. 196-198]

Some key informant also stated that,

> "Yes, feeding habits influences your health because others eat just to eat others eat and they don't add weight and others one will eat little and they become big. In addition, what we eat too influences our health, for example, I eat too much ugali and vegetables and meat I will be healthy but when I start eating junk and rubbish, I will definitely be unhealthy." [KII_Local Adminstration Rep_Lang'ata, Pos. 55-56]

These sentiments are validated by those of another respondent, who is a health worker who argued that,

> "Yes, it does, if a person is not eating healthy, they are more prone to these lifestyle diseases like cancer, hypertension and diabetes." [KII_Sub-County Moh_Lang'ata, Pos. 61-62]

Factors that Determine Preadolescents and Guardians' Meanings and Definitions of Health and Disease

a) Socio-Cultural Factors

The socio-cultural factors that influence preadolescents' and guardians' meanings and definitions of health and disease examined in the study included culture, family, religion, and gender. To start with, the findings of the study revealed that family played an integral role in shaping the understanding and perceptions of health and diseases among individuals in a society. From selected responses, it was evidenced that a 'bad' eating culture among children and preadolescents emanates from what they see and learn from their parents or guardians. According to a respondent in one of the in-depth interviews,

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> "Their parents are dumb. Of course, this kid comes from a bad eating culture from either parents or caregivers. Am just thinking if the kid says I want chicken the parent will not say have greens. They come from a bad eating family, and they will end up having bad eating habits and are thus vulnerable to these diseases that we are talking about today. Some families never even encourage their children to play" [Male Participant, Kayole IDI]

This is corroborated by an account by R5 in one of the focus groups who narrated that;

> "For obesity in children, I can say we as the parents are the cause. This is because of the food we are giving our children and we never really monitor their physical activities. Worse is that we leave everything to the caregivers and they become the ones to regulate the amount of food the children eat, what they eat, and their physical activity. In this case, the health and physical activity of our children becomes compromised. So, I can say parents have contributed to the bad health behaviours among the children" [P5, Langata FGD]

The nutrition and food habits of a family also emerged as a factor that influence the perceptions of health and disease, particularly concerning children and pre-adolescents.

> "I usually see it but because I think from the beginning, the way I view that baby, I see as if the baby has been brought up with sugary food and without a properly balanced diet. I also consider that child unable to play with other kids because there's less burning of fat" [P1; Langata FGD]

With regards to nurturing children's eating habits, an adult woman in the parent study highlighted the important role of mothers in nurturing preadolescents' eating habits through various mechanisms such as eating socialization. According to the respondent;

> "Us mothers should not allow our children to dictate that they want this and not that. This is because you could have cooked a balanced diet and you know that is what is good for them and then they tell you they want chips or noodles … so you have to put a rule that ensures what you have prepared is what they eat. And this is not meant to coerce them but because you want good health for them and them to learn and understand what it means to be healthy." [P8, FGD_Adult Women_Lang'ata]

These findings illustrate that, parents and/or guardians play a critical role in the socialization of preadolescents, including influencing their food choices and eating behaviours through making critical decisions on their dietary and physical activity needs, which are crucial in shaping their meanings and definitions of the concepts of health and diseases. There is no doubt that the parenting environment is a fundamental and the first context in which preadolescents' eating behaviours are socialized. This is because, how children and preadolescents are socialized influences their learning and adoption of healthy habits and behaviours. The findings are consistent with those of Haines et al. (2019), who point out in their study that parenting styles and practices such as permitting children to decide on their food choices, and avoidance of food restrictions could influence the children's dietary habits. They also agree with those of a study by Daniels (2019), who observed that parents and guardians have a role in encouraging their preadolescents to adopt values and habits that they are certain will help them make informed health choices as they grow older.

In addition, gender was also established as a factor influencing how the respondents perceived the phenomena of health and diseases, especially among parents and/or guardians. Participant 3 presented the notion that;

> "For women, it's because they like eating and they don't even realize they are obese but still it relates to food intake and the lack physical

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activities, for men it depends sometimes it's because of disease like ulcers they force you to eat so much and slowly you become obese if you are less active and eating fast foods," [P3, Male FGD, Kayole].

In this case, the participant held the notion that women's unhealthy eating habits and lack of physical activity worsen their obesity conditions. For men, the participant related their excess food intake with the presence of an underlying condition. This notion implies gender is a crucial influence on how individuals in society view and evaluate the behaviours of females and males pertaining to their eating and lifestyle habits. This is in line with the arguments of Varì et al. (2016) who note that physical activity and dietary habits are significantly influenced by gender-related behaviours and attitudes that endorse different patterns of unhealthy and healthy behaviours among men and women.

Moreover, religion has been presented in the findings as an important factor influencing children's and preadolescents' eating practices, behaviours, beliefs, and values. According to an adult woman in Langata;

> "Yes, they are there. First is cleanliness; we have taught our children about cleanliness. Especially as Muslims, we use our hands so much, for long calls we use our hands. When we give food to our children they must use their hands, we don't allow children to eat while standing even if they are in a hurry…our religion tells us. Even drinking water, they do while seated. So those are some of the rules our Muslim children have been taught. So, you will find them, even in school they sit down to eat." [P2, FGD_Adult Women_Lang'ata, Pos. 77]

The findings of this study reflected how individuals from local communities perceive and understand healthy eating and elucidations within their cultural frame of reference, including religious practices. This finding emphasizes the importance of religious eating socialization in helping preadolescents adopt healthy eating practices, behaviours, beliefs, and values that are practiced and accepted by their families and immediate societies. This conforms to the arguments of Haines et al. (2019) who point out the significance of the social environment for dietary practices among pre-adolescents. The authors reiterate the fundamental role of the parenting environment in which children's eating habits are socialized.

Furthermore, mothers' attitudes and knowledge toward healthy eating emerged in the findings of the study as a key factor influencing preadolescents' health. A respondent in one of the in-depth interviews presented an observation that "*These diseases and obesity in children is because of the feeding habits. Mothers are not cooking food until it is well-cooked leading to these diseases. The raw food is put in an oven and most people are eating food that is not fresh."* [R1, IDI-Langata].

This finding relays the place of parents and guardians as key agents in the promotion of good health practices, education, and behaviour of their children. In essence, parents and/or guardians are perceived as the creators of food environments and play a significant role in structuring the preadolescents' experiences with eating and food through their food practices, beliefs, eating attitudes, perspectives, understanding, and knowledge of the benefits of nutrients and food on health. This finding agrees with those of a study by Romanos-Nanclares et al. (2018), which points out the significance of acknowledging and better comprehension of the role of guardians/parents, especially their eating knowledge and attitudes, on the dietary quality and long-term health of their children.

b) Economic Factors

Education has also been highlighted in the findings of the study as a key factor determining preadolescents' and guardians' meanings and definitions of health and disease. According to a fruit vendor, who was one of the respondents in the

parent study, the improvement in the education status among some of the local communities, has contributed to an improvement in dietary habits. The respondent stated that;

> "Somalis are now educated and thus they understand the health benefits of food and thus they cannot eat food without *bania* and juice, it is necessary. A banana is also necessary; they had better lack anything else but not a banana. They must eat orange and pawpaw, in general, fruits if they eat rice, they must eat with these fruits too." [KII_Food Vendor_Lang'ata, Pos. 27-28]

Additionally, a sub-county nutritionist in one of the study sites reiterated the role of health education in influencing people's food choices. The respondent mentioned that;

> "I think we need to do a lot of health education because you know people make their own food choices and people will read about health and diseases. However, Kenyans do not have that culture of reading and we, therefore, need to do a lot of health education at the household and community levels using the media because I believe through the media people will make the right choices. I saw the other day that Safaricom and UNICEF opened a wall where they will be sharing information with adolescents and teenagers about nutrition and HIV. I think that is a better platform. We can leverage and do the same to everyone across the board, young and old. So, we will begin with what they know to what they do not know." [KII_Sub-County Nutritionist – Kayole]

These findings imply that there is an association between a household's educational status and preadolescents' healthy eating behaviours. This finding is consistent with those of a study by Al Yazeedi, Berry, Crandell, and Waly (2021), which links higher parental or household education levels to more children's intake of vegetables, dairy, and fruits.

Additionally, the socioeconomic status of households has been mentioned as a critical factor influencing healthy and dietary behaviours among preadolescents in the study. A key informant stated that

> "The prevalence of obesity among middle-class children is because of the lifestyle, they eat lots of junk and do not exercise, they are just seated watching a movie as they eat, compared to a child in the slum waking up early and going to school very far by foot and by the time they are going back home that is already physical activity. Households in low-income settings buy small quantities due to finances thus buying pizza and burgers is impossible unlike those in high-income homes. The food is customized to accommodate the whole family. With Ksh 200, the whole family will eat and it is something fresh. They are also physically fit." [KII_Sub-County Moh Lang'ata]

c) Contextual Factors

Lastly, living environments and the parents' nature of work have emerged in the findings of the study as contextual factors that influence the eating and health behaviours within households, which then impact the health and nutrition outcomes of children and adolescents. First, the abundance of unhealthy fast foods has been mentioned as one of the factors influencing the health and dietary habits in the study areas. A caregiver interviewed in the study noted;

> "There are a lot of fast foods. This area is mostly characterized by Somali and Asian cultures and we have a lot of chips and fries joints. Since most young people who live here don't have time to cook due to work or such things because as you said this is a middle-income area so most people don't cook from their homes, they buy food from outside. It could be from the fries, meat especially red meat, and broiler chicken. These are the type of food that a lot of people have here, but mainly chicken and fries taking an example from the school here, many children do not

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carry food from home they are given money to buy food, which in most cases is fast food and snacks. To me, such kind of behaviours have contributed to obesity in children and also the increasing prevalence of diseases such as hypertension, diabetes, and also cancer. Therefore, those are the types of food they eat here and are not healthy at all." [IDI_Caregiver_Lang'ata Mw4, Pos. 14]

These sentiments point out the influence of obesogenic environments characterized by contemporary diets that are based on unhealthy convenience foods, soft drinks, fast foods, calorie-dense snacks, and the abundance of foodstuffs. This finding is in tandem with the conclusions of a study by Scaglioni et al. (2018), which pointed out that food preferences and choices keep shifting throughout a lifetime under the impact of environmental factors such as an obesogenic environment. In this lens, therefore, the changing food preferences for children and preadolescents due to their living environments become significant factors for food choices, and hence diet quality and vulnerability to diet-related disease.

Not only did the respondents point out the consumption behaviours based on the facets of their living environment, but also argued that the nature of the parents' work determines the type and quality of food offered to the children. As stated by a respondent,

"…Surely, there is no supermarket that doesn't sell cooked foods like chips, pilau…all of them…and sometimes you are at work and you are hungry and you didn't carry food so you have to buy the cooked food…like chips, soda or a burger. Also, maybe, you leave work late and tired and so you decide to buy ready food instead of going to cook. I will buy fries, chicken, and some juice that's ready food for children to eat, even if they don't have the required nutrients. We definitely will at some point eat those non-nutritious foods, just because of the sweetness of the food and also the time-saving factor due to our work." [P10 - FGD_Adult Women_Lang'ata, Pos. 38]

To this point, therefore, it is evident from the findings of the study that various factors influence people's perceptions, understanding, and practices, particularly concerning preadolescents' and children's eating habits and lifestyles. These include gender, family environments, religion, culture, maternal influences, socioeconomic status, education level of the parents and household members, as well as their living environments (obesogenic environments).

Meanings of Obesity and NCDs among Pre-adolescents and their Guardians

The second objective of the current study was to establish meanings and definitions of obesity and non-communicable diseases (NCDs) among preadolescents and their guardians in Nairobi City County, Kenya, based on the findings of the KENFIN-EDURA project. The key themes that emerged under this objective include obesity and NCDs as Outcomes of Dietary Habits, Obesity and NCDs as Outcomes of Activity-Related Habits, and Population perceived to be at a Higher Risk of Obesity and NCDs.

Obesity and NCDs as Outcomes of Dietary Habits

To begin with, obesity and NCDs, as contemporary health concerns for children and adolescents, have been associated with eating habits and dietary behaviours. For instance, a community health volunteer (CHV) in Kayole, Embakasi Constituency mentioned,

"Obesity for children I can say we as the parents are the cause because of the food we are giving them. We leave caregivers to take charge of everything and yet you as a parent are the ones supposed to regulate the amount of food they eat, what they eat, and their physical activity." [KII- CHV_Kayole]

In an FGD with adolescent boys in Langata, one of the boys perceived obesity as a disease that is caused by eating too much junk and sugary food, which is unhealthy and may cause other diseases.

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He mentioned, *"Crisps and a lot of sugary food cause obesity and other diseases since they are not healthy for children and also older people."* [P7-FGD_Adolescent Boys_Lang'ata]

Just like obesity, most participants understood NCDs as outcomes of dietary habits. For instance, a focus group participant shared the notion that,

> "I can say food affects our health because if we can go back and see how the food we eat is produced... I think it is the vegetables these days … they are using pesticides, which are increasing the rate of growth such that after a month the vegetables are ready to be sold and consumed. Also, you find in the supermarkets there are so many things like those grown using chemicals. In the early days, vegetables used to be grown within three months, but now it is ready in less than a month. Therefore, these things are the ones affecting our health and making our children prone to things like cancer and other diseases." [P3, FGD Men Kayole]

A participant in another focus group stated that;

> "Yes, they are there as a lot of red meat is not good for your health, the drinks or alcohol people are drinking nowadays, sugar, salt, and fat when cooking is not good for your health. We should go back to our traditional way of cooking without the fat. These vegetables were picked from the garden and boiled just like that." [R1, FGD_Adult Women_Lang'ata, Pos. 121-122]

The adolescents in the study, perceived NCDs as caused by dietary choices such as eating unhealthy food. According to an adolescent boy,

> "Someone who eats or drinks unhealthy food such as fatty food and sodas might get all sorts of diseases that cannot be cured and someone who eats healthy food cannot get disease aah cannot get diseases and sometimes get diseases that can be cured." [P7, FGD_Adolescent Boys_Lang'ata, Pos. 442]

These findings illustrate the respondents' linkage of NCDs to dietary habits including consumption of high caloric foods and behavioural patterns such as alcohol and tobacco intake. The findings are consistent with those of a study by Pengpid and Peltzer (2019), which highlighted that the intake of high levels of sugar and sugary drinks, salt, refined and processed foods, and saturated fats is associated with increased risks of NCDs.

Equally important, obesity has been associated with an increased prevalence of chronic illnesses such as cancer, high blood pressure, and diabetes. In an FGD with adolescent girls in Langata, one of the participants presented an opinion that; *"When you are obese, you are prone to any diseases cancer, high blood pressure, diabetes, stroke cholesterol, nervous system, and heart attack."* [P1-FGD_Adolescent Girls_Lang'ata]

Obesity and NCDs as Outcomes of Activity-Related Habits

Activity-related habits have been associated with NCDs in the study. Physical inactivity has been mentioned as one of the modifiable behavioural factors for NCDs. A participant mentioned that;

> "For adults, it is someone who has not been exercising and exercise is not like the one you go to the gym but even just walking, some even take a Boda Boda for distance like from here to. Even if he/she does not want to walk, for kids, it depends on the foods the parents give them … the food has many fats. Many kids also do not play as we did in the past. Sadly, they spend most of their time watching TV and playing mobile games and their parents do not even seem bothered by this." [P4, FDG_ Kayole Women]

Moreover, obesity has been associated with physical inactivity. A caregiver believed that if a person fails to exercise regularly, they will be unhealthy and obese. She stated,

> "If a person does not exercise regularly, they will be unhealthy, or even obese. Considering the lifestyle today, one can even jog in their

own house, make sure that they eat right, and exercise as regularly as possible to avoid being obese. Children should also be allowed to play because if they don't, they will end up being overweight, and other children will even make fun of them." [IDI, Caregiver_Kayole]

Another respondent added that;

"Okay, one tends towards being obese as I said before if you are eating and not exercising, the body is not being activated and it's just at rest and the digestive system is not active. However, when you exercise, for example when running or in a gym, your body becomes more active than when you are at rest when it becomes active the system become activated, and through the process, they tend to be stronger and resistant to health-related problems." [IDI, Caregiver_Lang'ata MW5]

These findings imply that physical inactivity and poor diets are the basic modifiable contributors, responsible for the upsurge of obesity and NCDs among children. Childhood overweight and obesity are recognized in the study to be associated with related comorbidities, such as diabetes, hypertension, and depressive disorders among others. These findings on the meanings and perceptions of obesity are in line with those of a study by Sanyaolu et al (2019), which points out the fact that certain aspects have been associated with childhood overweight and obesity in contemporary society. The authors highlight unhealthy dietary patterns such as taking more sugar-sweetened foods, frequent eating away from home, and snacking more often, as well as lack of physical inactivity as the key risk factors for obesity among children and adolescents.

Population at a Higher Risk of Obesity and NCDs

Regarding the population at a higher risk of obesity and NCDs, the parents/guardians and other older participants noted that everyone is at risk of these conditions, regardless of their age and gender. However, the adolescents in the focus groups did not perceive themselves to be vulnerable to NCDs as the adverse consequences of physical inactivity and unhealthy habits. To them, it is the older generations that are at an increased risk. The adolescent boys and girls in Langata and Embakasi mentioned older people as the population at a higher risk as seen in selected quotes below:

"Elders …Those from sixty-five and eighty"

"From seventy years and above"

"18 and above, and adults such as the old people"

These findings illustrate that perceived vulnerability to NCDs among adolescents is low, emphasizing the fundamental role that perceptions and attitudes might play in shaping their health practices and dietary choices. These are consistent with the observations by Moitra and Madan (2020), that children and adolescents hold several misconceptions about aspects associated with NCDs, with a majority of them perceiving the diseases as illnesses of old age. It is therefore crucial to dissipate such misconceptions and false meanings and definitions of NCDs as they could be potentially detrimental to their health behaviours.

Implications of the Meanings and Definitions of Obesity and Non-Communicable Diseases on Health Behaviours among Preadolescents and Guardians

The last objective of this secondary study was to explain the implication of the meanings of obesity and non-communicable diseases on health behaviours among preadolescents and guardians in Nairobi City County, Kenya. From the findings of the study, it is evident that the participants are aware of the influence of certain health behaviours on their health and wellbeing, including those that are detrimental in increasing the odds of diseases. As mentioned by a focus group discussant,

"I would say lifestyle is the major driver for the upsurge of these diseases. People are too busy to exercise. They don't have time to eat healthy because they do not have the time to cook…they buy ready food from the supermarket. If this trend continues, then we will be seeing more young children getting sick

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from diseases such as diabetes, cancer and not forgetting obesity. It is, therefore, the responsibility of us parents to give our children healthy food and encourage them to exercise." [P9, FGD_Langata Women]

A caregiver in one of the study areas reiterated the effect of consuming high-fat calories and fast foods by preadolescents and teens on their health. She stated that;

> "Now we have these foods like chips that the preadolescents like very much with the broiler chicken. The way these foods are prepared is that they are cooked with a lot of oil, and scientists often tell us that too many fats are not good for our health. That's why you see such children being so obese, some have difficulties in breathing, others have heart conditions, and some even die when so young due to eating habits. [IDI_Caregiver_Kayole]

The respondents also recognized the lack of or inadequate physical activity as a health risk behaviour that is associated with the increasing prevalence of NCDs. A key informant presented the sentiments that;

> "The prevalence of obesity among middle-class children is because of the lifestyle, they eat lots of junk and do not exercise, they are just seated watching a movie as they eat, compared to a child in the slum waking up early and going to school very far by foot and by the time they are going back home that is already physical activity." [KII_Sub-County MoH Lang'ata]

These opinions are corroborated by those of another respondent who stated that;

> "Because of the lifestyle, children are nowadays not eating healthy foods plus they are not also exercising as they did before. It has become very common to hear about children with high blood pressure and even diabetes. They watch TV after school till late at night." [IDI_Caregiver Lang'ata]

These findings agree with the arguments of Sulat et al., (2018), which are based on the Health Belief Model (HBM), where the authors outline health risk and health protective behaviours. According to the authors, health risk behaviours include dietary habits such as consumption of high calorie-diet, excess fat and food that are low in nutrient contents, high levels of a sedentary lifestyle, and physical inactivity.

Abusing substances such as alcohol and tobacco have also been mentioned in the study as risky health behaviours that increase people's vulnerability to NCDs. A few verbatim quotes of how the respondents highlighted alcohol and drug use as a health risk behaviour are listed below.

> "If you take a lot of alcohol, and drugs like bhang, tobacco, and cocaine you will be prone to diseases such as cancer, heart diseases, and lung diseases."

> "I think alcohol and cigar smoking is bad for someone's health. You will end up with weird diseases such as liver cirrhosis and lung cancer. Your health will also be bad"

> "People who use tobacco cigarettes, smoke shisha, and drink this liquor being sold at 50 bobs are at high risk of these diseases … Kenyans do not listen anyway"

Conversely, the respondents in the study highlighted some behaviours and dietary practices that they perceived to be health protective. An adult man in one of the focus groups stated that:

> "Food is important. It acts as medicine to the body but it gives energy. The social function of food is that when you eat together as a family you feel happy. But I have seen in the recent past like 20 to 30 years ago that people loved fried foods like chips but today people are health conscious. If you visit here people are buying traditional vegetables and in the supermarkets. People are more health conscious." [P6, FGD_Adult Men_Kayole, Pos. 93]

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Another discussant mentioned the food that she perceived would promote health and prevent illnesses among children and adolescents. She mentioned that;

> "Young children and those growing teens should be given fruits, milk, nutritious porridge and cereals like beans, not forgetting water and vegetables. Unlike chips and sodas, these foods are good for their health and you will not hear them getting sick often as compared to those who take chips and too many sugary drinks." [P11, FGD_Adult Women_Kayole, Pos. 34-36]

According to the responses, eating healthy food such as vegetables and fruits, and being physically active help in reducing vulnerability to diseases and thus better health.

While children and adolescents draw their understanding and perceptions from their personal experiences and knowledge attained in school and other social representations, it is worth recognizing that they can give acceptable conceptualizations of health, including behaviours that promote good health. This is evidenced by the findings of this study, as presented in the following verbatim quotes from adolescent children in the study.

> "When a person consumes unhealthy food, they will grow unhealthy, but when you consume healthy food such as proteins and vitamins, you'll grow healthy."

> "A person who eats healthy food is strong and a person who eats unhealthy food is not strong"

> "A person who eats healthy foods does not get sick always and a person who eats unhealthy food is, he or she is sick always."

These findings reveal the potential of children and preadolescents to be used as change agents in health practice. They agree with the sentiments of Mouratidi et al. (2016), who argue that children tend to comprehend the physical and social facets of health and disease, including health protective and health risk behaviours. In summary, these findings imply that even though lay conceptualizations of health and illness provide additional significant information to the existing biomedical frameworks, these processes often have important implications for disease control, health promotion, and illness management.

CONCLUSIONS, AND RECOMMENDATIONS

Considerable levels of the potential of curbing the world's souring burden of diseases, particularly NCDs in the LMICs, lie in modifying people's health behaviours. It is evidenced from the findings of this study that lifestyle behaviours including dietary practices and exercise-related habits are implicated in the onset of health conditions such as Type 2 diabetes, obesity, some cancers, and hypertension. There is no doubt therefore that changing these behaviours, especially the health risk habits, can have prevailing effects on the well-being and health outcomes of preadolescents and other members of the populaces.

However, to change these behaviours, the understanding of people's meanings and definitions of health and illness, including the factors that influence their conceptualizations becomes integral. Meanings and definitions of health and disease" refer to the social constructions and interpretations of an individual's health in general, either by the individual or in the instance of proxy response, by the respondent. The meanings and definitions of illness and health could be significant in elucidating individuals' dynamic healthcare options, risk behaviours, as well as their health-seeking behaviours. Equally important, these meanings and definitions are integral to the comprehension of the distinctive elements in the prevalence and determinants of NCDs, particularly in the LMICs, as well as in the development of effective prevention measures and strategies.

While the preadolescents' conceptualizations of health and NCDs were not adequately captured in the original study, the limited available data from this cohort revealed it is worth recognizing that

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they can give acceptable conceptualizations of health, including behaviours that promote good health. Therefore, children and preadolescents have the potential to be used as change agents in health practice.

Most importantly, the role of the family environment in influencing health behaviours among children and adolescents came out strongly in this study. Essentially, the preadolescents' ecological niche, which includes the family act as fundamental gatekeepers in terms of facilitating their healthy eating habits and promoting active lifestyles. Parents and/or guardians provide food experiences and environments, through which children model their habits and health practices. In sum, parents and guardians play a critical role in the socialization of preadolescents; including influencing their health choices and behaviours through making critical decisions on their dietary and physical activity needs as well as in shaping their meanings and definitions of the concepts of health and diseases.

Based on William Cockerham's "Health Lifestyle Theory" (Cockerham, 2017), it is clear from the findings of the study that healthy lifestyle choices are not separate random personal choices, but rather cluster in different patterns based on gender, class, and other structural factors. More specifically, health and disease patterns, meanings, and conceptualizations are not inadvertent but are rather levied socially and culturally through top-down socialization processes. Individual experiences that enforce awareness of the variety of choices available to people and the socially outlined protocols of selecting them come into play as well. Health behaviours, meanings, and definitions, therefore, shape the well-being and health statuses of individuals in a society and are increasingly acknowledged as multifaceted and entrenched in healthy lifestyles.

Overall, the study concludes that parents/guardians, preadolescents, and other stakeholders understand the basic definitions of health and had the basic knowledge of obesity and diseases. They also understand the key facets of good nutrition. Therefore, this knowledge and understanding of the meanings of health and diseases need to be translated into practice. Public health strategies should focus on encouraging parental healthy-eating attitudes rather than simply educating parents on what to feed their children, recognizing the important influence of parental behaviour on children's practices.

Based on the findings of the study, the following recommendations are made to improve the health and well-being outcomes of children and adolescents.

- Building on the classic socialization theory, this study recommends that parents and guardians embrace parental feeding mechanisms and food habits that promote the health and well-being of their offspring
- The study recommends that stakeholders and the government enhance and strengthen the capacity and role of institutions in the societal development of physical activity and nutrition to prevent the increasing prevalence of NCDs
- The study recommends more prevention programmes that will be crucial in addressing the ever-soaring prevalence of NCDs, taking into account education and socioeconomic aspects.
- The study also suggests that educational programmes be offered to all adolescents and children across all socioeconomic settings, with the motive of promoting healthy eating, physical activity, and adequate sleep, as well as reducing computer and TV time

Suggested Areas for Further Research

The study suggests the following areas for further research:

- The study suggests a future qualitative study that explores the development of awareness and influence of healthy eating amongst preadolescents and the degree to

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which they are willing to take part in healthy-eating socialization.

- A systematic study on the influence of intrafamilial interaction and communication as a healthy-eating intervention.
- A quantitative analysis of drivers of health behaviours based on KAPs (Knowledge, Attitude and Perceptions) approach
- A future study focusing on the role of peers and the media as health socialization agents.

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