

# Coventry University Students' Perceptions of Factors That Influenced Them to Make Healthy or Unhealthy Dietary Choices

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**Abstract** — The study aimed at exploring Coventry University students' perceptions of factors that influenced them to make healthy or unhealthy dietary choices. A qualitative approach was used to explore students' perceptions of factors that influenced their dietary choices. **Methods and Analysis**- Five participants all Coventry University students were recruited for this study using purposive sampling method. One to one semi-structured interviews were conducted to explore students' perceptions of factors influencing their dietary choices. Students were interviewed using open-ended questions to capture a broader perspective of the phenomena of interest. Interviews were manually transcribed, and an inductive thematic analytical method was used to analyse data which lead to the identification of three major themes. **Results**- The results indicate that three major themes emerged which included concept and perspectives of healthy and unhealthy dietary choices, perceptions of factors influencing students' dietary choices and solutions to healthier choices. Concepts and perspectives indicated that students understood the meaning of healthy and unhealthy dietary choices as well as expressing how they understood the concepts. The students also expressed their perceptions of factors that influenced them to make dietary choices which includes socio-economic, lifestyle factors, social and community networks and environmental factors. These include among cost, Time, knowledge, health, Availability, Accessibility, location and weather changes. However, the most influential factors were cost, time, family and health. Possible recommendations were suggested to promote healthier choices including proper planning, advertisement of healthier foods, Eating when necessary and personal responsibility.

**Keywords**— Healthy Dietary Choices; Unhealthy Dietary Choices; University Students; Coventry University; Food Choices; Dietary Behaviour; Nutrition; Eating Habits; Health Awareness; Lifestyle Factors; Food Preferences; Socioeconomic Factors; Peer Influence; Nutrition Knowledge; Student Well-Being; Dietary Decision-Making; Health Behaviour; Food Environment.

## I. INTRODUCTION

University student populations are known to engage in health risking behaviours including risky eating (Jina et al. 2015). International research has demonstrated that student life in the University setting is characterized by numerous changes in eating behaviour and dietary patterns (Stock and Larsen 2008; Peltzer et al. 2014). Eating behaviour is an important aspect of life as it can affect long term health outcomes because unhealthy eating habits such as skipping meals, consuming nutrient deficient meals and lack of timely diet are known to cause various health problems and nutrient deficiencies (ElAnsari et al. 2015; Papadaki et al. 2007). A balanced diet and consumption of quality food can contribute to physical and mental welling being of individuals (Hilger et al. 2017; Bagordo et al. 2013) as well as understanding the significance of a healthy diet in the lives of University students which is considered a large population group targeted to prevent various health problems (Nesliah et al. 2011).

Globally, the literature suggests that during the transitional period from secondary level to graduate level, students often engage in unhealthy dietary habits and have poor nutritional intake (Deliens et al. 2014). Previous studies indicate that eating behaviours and food habits are determined by a variety of individual, social and environmental factors in a given context (Deliens et al. 2014). This is usually enhanced by the University living environment which places freshmen in unusual circumstances involving detachment from family members, new friends, student politics, campus culture and norms due to excitement of entering campus that sometimes causes them to struggle to adapt to the new environment (Small et al., 2013; Dyson and Kimberly 2006). Based on the literature presented above, it is wise to suggest that this research was perfect to be done on University students because they form a large category of people who are prone to several unhealthy outcomes as result of unhealthy diets (Neslisah et al. 2014). In the UK, University students represent a substantial proportion of 50% of the young adult population (NUS 2010). This population represents a group of young adults with unique

set of factors driving dietary intake which are highly linked to the transition from home to University, autonomy over food choice, small food budgets, new social groups and cultures (Sprake et al. 2018). There are numerous indications of high intakes of confectionary and fast foods and low consumption of fruits and vegetables (Devin et al. 2006; Tanton et al. 2015) and because binge drinking is considered endemic, alcohol consumption has received most research attention (El Ansari et al. 2011). Furthermore, the first year of university life has been associated with body weight gain in both North America (Aaron et al. 2009) and UK students (Finlayson et al. 2012; Nikolaou 2012).

Weight gain has been linked to cause long-term repercussions since it could be a significant predictor of obesity in later stages of life from young adulthood (Guo et al. 2000). Therefore, Universities may represent a setting in which dietary behaviours are open to change and large groups of young adults can be reached representing a perfect target for health promotion (Sprake et al. 2018). The purpose of this study was to explore Coventry University students' perceptions of factors influencing their healthy and unhealthy dietary choices using a research question: "What are Coventry University students' perceptions of factors that influence them to make healthy or unhealthy dietary choices?"

However, dietary studies of British University students are constrained by crude dietary assessment, small sample size and they generally focus on single university (Devin et al. 2006; Tanton et al. 2015).

Therefore, the results of this study indicated that students perceived several factors that influenced their dietary choices including cost, time, health and knowledge, family, availability, accessibility, religious beliefs, geographical location and weather changes. Students also demonstrated their perception of the concepts of healthy and unhealthy dietary choices and how they perceived the concepts.

However possible solutions were suggested to promote healthy eating among University students. The findings of this research were consistent with several studies (Tanton et al. 2015, Hsieh 2004, Michelle et al. 2018, Kabir et al. 2018 and Deliens et al. 2014) that have been done on University students however, more research is needed to address the issue of dietary choices among University students as well as intake of recommendations. It is wise to recommend that the findings may not be used to provide a generalized image of University students but could be used to highlight public health concerns.

## II. LITERATURE REVIEW

### 1. Introduction

The Literature review section involves the exploration and evaluation of studies as a result of literature search regarding Coventry University students' perceptions of factors that influence them to make healthy or unhealthy dietary choices. Reviewing literature in this chapter provides an in-depth explanation of the research topic and supports formulation of the research question. However, this was done using Coventry University Locate resource through data bases including CINAHL, Medline and Google scholar.

Hsieh (2004), conducted a qualitative study to explore factors influencing student's decisions to choose healthy or unhealthy snacks at the University of Newcastle, Australia. Ten students who study at University of Newcastle in Australia participated in the semi-structured interviews and content analysis was used for data analysis. Results indicated that a variety of food was consumed by the students and they generally classified snacks as unhealthy. There were four major themes that emerged including the factors related to selection of healthy and unhealthy snacks, perception of healthy and unhealthy snacks, feelings related to consumption of snacks and ways to avoid unhealthy snacks. The factors influencing choices of healthy or unhealthy snacks included availability of snacks, environment, health problems, study pressure, habits and social activity (Pei-Lin 2004). However, Hsieh (2004) highlighted the small sample size as a limitation of the study which cannot be used to provide a general conclusion. However, according to WHO (2018) resources, most researchers believe that the larger the sample the better the study outcomes, yet it is not necessarily true. It is much better to increase accuracy of data collection by training interviewers or pretesting data collection tools than increasing sample size (WHO 2018). The author agrees with Hsieh (2004), that understanding the factors influencing decisions about snacks among students can aid in developing forms of interventions that make healthy eating easier.

Michelle et al. (2018), conducted a qualitative study using focus groups of females (n=31) and male (n=18) to explore influences on food choices of University students in Australia. The aims were to identify knowledge of the Australian Dietary guidelines (ADGs) and sources of nutrition information preferred among University students and to identify factors that influence food choices and eating behaviours of students at one Australian University as well as identifying nutrition knowledge deemed relevant to University students and how they would like nutrition messages to be communicated. Gender separated focus groups were conducted consistent with

focus group methodology that advises a homogenous group participant to feel comfortable when sharing ideas (Acocella 2012). Results indicated common factors influencing food choices that were grouped into internal and external. Internal factors included level of nutrition knowledge based on ADGs, knowledge of serving size for different food groups, perceived relevance of dietary guidelines, compliance to dietary guidelines, appearance and weight control, cooking skills and confidence. External influences included sources of nutrition knowledge, current living situation and peer influence, cost, convenience, time and effort required. The findings confirmed that the cost of food for independent students influences food choices with a strong perception that healthy food costs significantly more than the unhealthy food (Harris et al. 2006: Jackson et al. 2009). Consistent with other studies, participants acknowledged that peers influenced their decisions to consume unhealthy foods, while living with parents positively affected this food choice (Kelly et al. 2013: McArthur et al. 2011). The study also identified that cooking skills, time, convenience and confidence reported to influence food choices. However, Michelle et al. (2018) recommended that more research needs to be done to explore how significant these influences are on food choices.

Kabir et al. (2018) conducted a qualitative study to explore factors influencing eating behaviour and dietary intake among resident students in a public University in Bangladeshi. 13 focus groups and 25 in-depth interviews were conducted, and thematic analysis was used to analyse the textual data and methodological triangulation to validate information. The results indicated that students behaviour and dietary intake were influenced by several factors including individual factors (cooking skills, food taste, food taboos, knowledge and perceptions), environmental factors (availability of cooking resources and facilities and food prices), societal factors included peer influence and social norms while factors related to University included campus culture and frequency of examination were the key aspects that influenced eating behaviour and dietary intake (Kabir et al. 2018). It was noted that this was the first study in Bangladeshi regarding nutritional intake and dietary behaviour of University students and the results reflect poor dietary intake which impacts their health, well-being and academic performance. Therefore, multi-level nutritional interventions could be significant in promoting healthy eating practices and dietary intake (Kabir et al. 2018). The author finds it reasonable to supplement the interventions with more research regarding health determinants among University students especially in Bangladeshi.

A qualitative study that was done by Deliens et al. (2014) indicated consistencies in the factors that influence dietary choices using five focus groups consisting of 14 male and 21 female university students from a variety of disciplines in a Belgian University. An inductive thematic analysis was used to analyse data and results indicated individual factors for example taste preferences, time, self-discipline and convenience and social networks for example lack of parental control, peers and friends. Other factors were macro environmental like media and advertising (Deliens et al.2014). However, Deliens et al. (2014) recommended researchers and administrators to provide information and advice to enhance healthy food choices, self-discipline and self-control, developing time management skills, social support, provision of vending machines with more healthy products.

A qualitative study done by Fernandes et al. (2015) on Brazilian University students to explore perceptions of the concept of calories, how it relates to healthiness and the role of calories information on menus. Focus groups of 21 undergraduate students were used from various universities and two categories of themes emerged including calorie concept and connection to healthiness and calorie information and food choices in restaurants. Calories were understood as energy units and their excessive intake was associated with weight gain. However, food healthiness was not associated to calorie content but rather to food composition (Fernandes et al. 2015). Calorie information was not considered enough to influence food choices, with preferences, dietary restrictions, food composition and even restaurant type mentioned. Only a few participants mentioned using calorie information on menus to control food intake or body weight. Discussions suggested the need for more nutrition information besides calorie intake to influence food choices. This study was a little different from the other studies because it was not cantered at one university although it focused on specific aspects regarding calorie information and healthiness of foods. Although the study was done on university students, the results exclude many aspects that influence food choices among university students and therefore recommendations for more studies in Brazilian Universities to explore more specific aspects regarding University students' perceptions of their dietary choices.

Dhillon et al. (2019) carried out a study to examine perceptions of the campus food environment and its influence on the eating choices of first year students attending a minority-serving university located in a food desert. It has been identified that the transition to university life may be associated with increased autonomy over food choice, small food budgets and exposure to new social groups and food cultures (Sprake et al.

2018). Twenty-one first year students were interviewed with five focus groups from November 2016 to January 2017. Grounded theory approach was applied for inductive identification of relevant concepts and deductive interpretation of patterns and relationship among themes. Grounded theory approach is a systematic procedure that enables researchers to identify concepts and build theory from qualitative data (Corbin and Straus 2008). Significantly, ground theory seeks to identify and explain how and why people behave in certain ways in similar and different contexts (Charmaz 2006; Corbin and Straus 2008; Dey 2012). However, the method requires huge volumes of data, it is time consuming and it may be difficult in practical terms to determine when the categories are saturated or when theory is adequately developed (Allan 2003). Themes related to food environment included adequacy for example variety and quality, acceptability like familiarity and preferences, affordability, and accessibility for example convenience and accommodation.

Eighty-four undergraduate Greek students aged 20-24 completed a single self-administered food habit questionnaire that asked about their current food practices and before they joined university (Papadaki et al. 2007). It was indicated that students who lived away from home showed decrease in fresh fruit, cooked and raw vegetables, oily fish, sea food, pulses and olive oil while increased in sugar, wine, alcohol and fast food intake (Papadaki et al. 2007). This implied that change of location, cooking skills and purchasing skills affected students who move to university compared to those who stay at home. It is wise for the researcher to suggest that universities need to put emphasis on students' dietary habits and practices because they seem to change as a result of changing location to university environment. In relation to this study, this factor was one of the most influential factors because all participants were international students. Therefore, it is important that Coventry university develops nutrition programs that aim at Improving students' dietary choices especially when they are away from home.

### III. METHODOLOGY

This chapter will highlight the different methods, the aim and objectives of the study, Ethical issues and rigour.

#### 1 Research Question

"What are Coventry University students' perceptions of factors that influence them to make healthy or unhealthy dietary choices? "

According to Cooke et al. (2012), developing a question is a critical step to effectively search for research evidence and ultimately achieving the desired outcomes of the research. To define the question for this study and to ensure that it is the right question, the researcher used the SPIDER tool. It is significant in the structure for literature search strategy and making research evidence of student's perceptions of factors influencing their healthy or unhealthy dietary choices (Cooke et al. 2012).

**(S)-Sample:** A sample of five participants.

**(PI)-Phenomenon of interest:** Coventry University students' perceptions of factors influencing them to make healthy or unhealthy dietary choices.

**(D)- Design:** Phenomenological qualitative research design was used for this study.

**(E)-Evaluation:** Perception of healthy and unhealthy dietary choices, Perceptions of factors influencing students' dietary choices and suggestions of healthier dietary promotion.

**(R)-Research type:** Qualitative research was used for this study.

#### 2. Aim and Objectives

##### Aim:

To explore Coventry University students' perceptions of factors that influence them to make healthy or unhealthy dietary choices.

##### Objectives:

- To explore students' perceptions of healthy and unhealthy dietary choices.
- To understand the factors that lead Coventry University students to make their dietary choices.
- To explore students' perceptions of circumstances that would mitigate the factors for unhealthy dietary choices and promote healthier choices.

#### 3. Study Design

This study was conducted using a qualitative research approach which aimed at exploring Coventry University students' perceptions of factors that influence them to make healthy and unhealthy dietary choices. This form of research was used because it offers a systematic form of inquiry into a social phenomenon in a natural setting (Teherani et al. 2015). This phenomenon is descriptive, that includes but not limited to people's experiences of aspects in their lives, how individuals or groups of people behave or how organisations function and how interactions shape relationships (Teherani et al. 2015). It is highlighted that qualitative research involves use of in-depth interviews to understand events from personal perspectives and

analysing text that arises from interviews to learn about private knowledge (Hammarberg et al. 2016). This is the reason as to why this approach was appropriate to explore Coventry University students' perceptions of factors that influence them to make healthy or unhealthy dietary choices.

In contrast, a quantitative approach would not fulfil the aim of the study since a deeper understanding of student's perceptions and underlying reasons for their dietary choices was required. A quantitative approach is used to quantify data and generalize results from a large sample rather uncovering trends and perceptions and diving deeper into students' problems usually from smaller sample sizes (Susan 2011). Therefore, a qualitative approach seemed perfect for this study to achieve its aim and goals for the desired results.

This approach was used to describe and explore the desired phenomena from the student's perspective who go through different experiences during university days. Consistent with other studies that have been done by (Hsieh 2004, Fernandez et al. 2015, Dhillon et al. 2019 and Deliens et al. 2014), a phenomenological qualitative research approach is uniquely positioned to support this study (Neubauer et al. 2019). The goal of phenomenology is to describe meanings of experiences in terms of what was experienced and how it was experienced (Teherani et al. 2015).

It is also important to understand that this study was underpinned by an interpretivist/constructivist research paradigm which tends to rely upon participants views of the situation being studied (Creswell 2003 p.8) which is important in recognising the impact of the research in their own perspective and experiences regarding factors influencing Coventry university students' dietary choices. As the research progressed it was noted that every participant expressed their own understanding of the subject investigated which makes the method reliable on participants views of reality and therefore drawing on constructivist beliefs that are based on multiple realities (Bergman et al. 2012). It is from this subjective point of view that the researcher was able to appreciate different opinions from the students who were interviewed thereby allowing the researcher to reflect on the students lived experiences which makes the whole process free from theoretical and pre-judicial interference (Van Manen 2007).

However, qualitative findings cannot be extended to wider populations with the same degree of certainty as it can quantitatively be analysed and this is because the findings are not tested to discover whether they are statistically significant or due to chance (Ochieng 2009).

The data collected indicated a difference in the way students perceived healthy and unhealthy dietary choices while a range of perceptions of factors influencing their dietary choices emerged and possible suggestions on promoting healthier choices were raised by students. The results highlight the significance of the study to the university population and therefore can be used to signal public health concerns.

#### **Participant Recruitment**

Coventry University students were chosen to participate in this study to gather their opinions or perceptions regarding the research topic. The significance of choosing University students may be grounded in the fact that they represent a substantial proportion (50%) of the young adult population in the UK (Heywood and Kathryn 2010).

A purposeful sampling method was used for this research to identify and select information rich cases with the use of limited resources (Patton 2002). The method involved identifying and selecting students or individuals that are knowledgeable or experienced with the phenomenon of interest (Cresswell and Plano 2011). Bernard (2002) acknowledges the importance of willingness and availability as well as the ability to communicate perceptions and experiences in an expressive, reflective and articulate manner in addition to knowledge and experience. According to lund Research (2012), the main goal of purposive sampling method is to focus on characteristics of a population that is of interest, which will best answer the research question. However, the sample is not representative of the population, but for some researchers this is not considered a weakness (lund Research 2012)

Participants for this study were recruited from Coventry University student's hub where a table (Appendix 1) was reserved through a gate keeper letter (Appendix 2) seeking permission to allow the researcher to recruit participants. Participants who volunteered to participate were contacted within 48hours through their email addresses a process that took one week. The next week, an interview date was fixed for the interviews to take place in bookable rooms of the University. However, before the interviews, participants were presented with participant information sheet (Appendix 3) with details of the interviews including ethical aspects and data protection requirements.

Five participants were recruited with the aim of exploring their perceptions of factors that influence them to make healthy or unhealthy dietary choices. Viktoria (2017) agrees with using five participants emphasising that five participants with the

same characteristics are enough and more than five do not necessarily mean better results.

Dworkin (2012) highlights that the sample size often considered in qualitative interviews is smaller compared to quantitative research methods because qualitative interview research methods are often concerned with gaining an in-depth understanding of the phenomenon which are centered on how students understood dietary choices and what perceptions they had regarding the factors that influenced them to make their dietary choices.

Most of the students who took part in the study were from the Faculty of Health life and sciences and one from the business department. All participants were male because two female participants were not able to participate due to confidential reasons. However, it has been previously reported that there is greater meat and fast food consumption among the male students than female students who tend to be more vegetarians (Devine et al. 2006 and Mccourt et al. 2014). However, this doesn't justify the exclusion of female participant because the study was not based on gender recruitment but included even female participants.

It is important to note that all participants were international students because Coventry University is a globally recognised university which admits many international students. This best explains why most participants recruited were all international students and originally mostly African countries including Nigeria and Ghana.

Table.1 Inclusion and Exclusion Criteria

| Inclusion Criteria                                                                                         | Exclusion Criteria                                                                                             |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Coventry University students 18years +                                                                     | Coventry University students with B.Sc. Dietetics, B.Sc. Nutrition studies and Public Health nutrition studies |
| All ethnicities                                                                                            | Students not from Coventry University and are below 18 years                                                   |
| Those can speak English                                                                                    | Those who currently have or have been diagnosed with eating disorder in the past.                              |
| Coventry University undergraduate 1 <sup>st</sup> to 4 <sup>th</sup> and Post-graduates from all faculties | Those who cannot speak English                                                                                 |

The inclusion criteria were based on maximum variation sampling which was used to capture a wide range of perspectives related the research topic (laerd dissertation 2012). The researcher included Coventry University students who are 18 years and above, students of all ethnicities, those who can speak English and Coventry University undergraduate 1<sup>st</sup> to 4<sup>th</sup> year and post-graduates from all faculties.

The researcher excluded Coventry University students with B.Sc. Dietetics, B.Sc. Nutrition studies and Public Health Nutrition studies, Students who are not Coventry University students, those who currently have or have been diagnosed with eating disorder in the past and those cannot speak English.

According to David (2019) the inclusion criteria are the characteristics that the potential participants must have in order to participate in the study. The study aimed at investigating Coventry University students' perceptions and therefore this makes them part of the inclusion criteria. Another aspect is the age which was specified as 18 years and above because it is required that participants should be old enough to provide legal consent (David 2019). An inclusion criterion is significant in qualitative research because it helps to ensure that the individuals who participate can provide the information that is necessary to answer the research question.

The exclusion criteria are any characteristics participants may have that disqualify them from participating in the study. It is important to understand that the exclusion criteria may not necessarily be the opposite of the inclusion criteria but rather aimed at protecting the potential participants and maintain a great level of ethical integrity (David 2019).

Therefore, significantly, the basis of inclusion and exclusion criteria is used to judge the validity of the results of the research question although this requires an in-depth knowledge of the research area (Patino and Ferreira 2018).

### 5. Ethical Considerations.

Ethics is a system of principals which can critically change previous considerations about choices and actions (Johnstone 2009). The significance of ethical considerations is aimed at recognising the relationship between the researcher and the participants especially in this kind of study where a range of different ethical concerns and qualitative researchers face concerns including respect for privacy, honesty and avoiding misrepresentation (Van den Hoonaard 2002). According to Georgia and Mariana (2019), the major ethical issues in conducting qualitative research are informed consent,

Beneficence, respect for anonymity, confidentiality and respect for privacy.

The study acquired ethical approval from Coventry University ethics committee (Appendix 4). Before the interviews, participants were given informed consent forms (Appendix 5) to consent that they would voluntarily participate in the interview and to ensure that they understood their rights in relation to the research, which they signed after reading through to confirm their participation. Participants were informed that they were free to withdraw their data without any reason should they wish to do so.

Armiger (2007), emphasises that informed consent is a major ethical issue in research which means that a person knowingly, voluntarily and intelligently in a clear and manifest way gives his consent. Participants were informed of the benefits of the research which aimed at helping the researcher and Coventry University to better understand students' perceptions of factors that influence them to make healthy or unhealthy choices. However, no personalised advice was given except a British Dietetic Association fact sheet (Appendix 6) was provided for further guidance on healthy eating. There were no minimal risks of participants getting upset whilst discussing their dietary choices.

All the information collected was kept strictly confidential and fully anonymised by a unique participant number rather than by name. Data was only viewed by the research team and stored on a password locked computer that is only accessible to the lead researcher. All the field notes and transcribed copies were kept in a locked file cabinet in the university until project submission. It is also important to note that data processing was done in accordance with the General data protection and regulation 2016 (GDPR) and the data protection act 2018. Coventry University is the controller of data provided by the participants therefore they reserved the rights to access their data as well as other rights including the rights to correction, erasure, objection and portability.

According to Resnick (2015), the significance of research ethics is that it helps to promote the aims of the research and increase knowledge. Supporting the value required for collaborative work such as fairness and mutual respect and hold accountability for researchers' action. Ethics can also ensure public trust and promote moral values such as the principle of doing no harm to others (Resnick 2015).

## 6. Data Collection Methods

The aim of collecting data in this research study was to hear participants perceptions of factors that influence them to make healthy or unhealthy dietary choices. From the data collected, perceptions of healthy and unhealthy dietary choices emerged, perceptions of factors influencing students' dietary choices emerged as well as challenges and possible solutions to healthier dietary choices.

There are several data collection methods in qualitative analysis including textual, visuals, observational or interviews (Silverman 2000). However, the most common are focus groups and interviews as highlighted by studies that were done by (Hsieh 2004, Michelle et al. 2018, Kabir et al. 2018 and Deliens et al. 2014).

This study was done to explore students' perceptions and experiences regarding their dietary choices. To achieve this, the researcher chose to carry out interviews because they are believed to provide a deeper understanding of the research topic than purely quantitative methods (Silverman 2000). In addition to that, the semi-structured interviews used allowed the researcher to prepare questions ahead as well as allowing participants the freedom to express their views in their own terms thereby producing reliable results and comparable qualitative data (Cohen and Crabtree 2006).

## Procedure

### Interview Topic Guide.

An evidence-based interview topic guide (Appendix 7) was derived by the researcher and guided by the supervisor with the aim of gathering rich data within the context of exploring Coventry University students' perceptions of factors influencing them to make healthy or unhealthy dietary choices. The interview guide was reviewed to ensure validity of the questions to be asked and appropriate changes were made after recommendations from a lecturer.

The interview guide consisted of several key semi-structured questions that helped to define the area of study and allow the researcher and participant to diverge in order to capture an in-depth exploration of the student's perceptions of factors influencing their dietary choices.

The questions began with warm comforting question to provide a relaxed environment for the participants. The participants were assured that there were no right or wrong answers to the questions which aimed to provide ease for them when expressing their views. Key guiding questions were asked to make sure that the interview focused on the aim of the study.

It is important to understand that semi-structured interviews provide flexibility compared to structured interviews which allows the discovery of information that is important but may not have previously been thought to be of value by the research team (Gill et al. 2008).

### Interviews

After participant recruitment, an appointment interview date was set and communicated to students via their email with soft copies of the participant information sheet. Two safe and convenient bookable rooms were booked from the Library (Appendix 7) and the Faculty of Health life and sciences (Appendix 8) in Coventry University. Gill et al. (2012), suggests that where ever possible, interviews should be conducted in places free from distractions and at times and locations that are most suitable for participants. The significance of this environment is that it allows the participant to feel more relaxed thus resulting in a more productive interview (Kvale and Brinkman 2009).

Five participants were confirmed for participation and interviews were held in the morning and afternoon sessions depending on the participants availability on campus. Five participants were enough to gather information regarding student's perception of factors influencing their dietary choices (Viktoria 2017). According to Spencer et al. (2003), the sample size and its composition is important in the evaluation of the quality and trustworthiness in qualitative research. Two morning sessions were held in a bookable room in the library and three sessions in the afternoon at the Faculty of health Life and Science.

During the interviews, participants were given a consent form to sign and make sure that they were aware of their rights as participants. Ochieng (2012) elaborates that respect for persons requires that research participants be given the opportunity to make choices about what should be done to them. In addition to that, Ochieng (2012) highlights that consent is not just a form, a signature or a mark but a process of information exchange between the researcher and the participant on the whole process. Significantly consenting before an interview informs the participants about the study details and gives them assurance about their ethical principles such as confidentiality and anonymity (Britten 2006).

Open-ended semi-structured questions were asked to participants to enable them to express their perceptions of factors influencing their healthy or unhealthy dietary choices. The researcher made sure that the participants felt relaxed and confident with the whole interview by asking relaxing

questions at the start of the interview. The interviews durations lasted for (44,21,36, 20 and 20) minutes respectively with an average of 28.2 minutes. Each interview was stopped at that point when the researcher could not extract any more information required to answer the research question at saturation point (Faulkner and Trotter 2017). It is important to note that the interviews were audio-recorded, and a few field notes were taken by the researcher and a British Dietetic fact sheet was given to the participants to provide further guidance regarding their healthy and unhealthy dietary choices. The researcher thanked the participants for their time and asked them if they would like to add something. This is significant because it gives participants an opportunity to deal with issues that they have thought about or think that they are important but have not been dealt with by the researcher (Kvale and Brinkmann 2009).

### 7. Data Analysis.

Thematic data analysis was used to analyse data. It was therefore appropriate for the researcher to thematically analysis data because the nature of the study positions the data collected within the constructionist paradigm (Braun and Clarke 2006) that seeks to explore people's perceptions, experiences and opinions about a phenomenon to be studied (Teherani et al. 2015). In addition to that, the objectives of the research were to explore students' perceptions of healthy or unhealthy dietary choices, to explore their perceptions of factors that influence them to make healthy or unhealthy dietary choices as well as to explore their perceptions of how they would promote healthier choices.

Data was collected using semi-structured interviews and the audio-records were manually transcribed into raw data that was examined using an inductive thematic approach for repeated data which was identified and then grouped into different codes, subthemes and then later into themes (Appendix 9).

The process involved transcribing audio-recordings for each participant and then coded to ease identification of similar patterns from the data. The transcripts were reviewed several times and to identify the appropriate data that was required from each participant's transcript to answer the research question. Braun and Clarke (2006) recommend that researchers should read through the entire data set once before beginning coding ideas as identification of possible patterns may be formed as the researcher becomes familiar with their data. The codes were grouped from which sub-categories were formed and then interpreted to form themes which were defined to provide meaning and reflect on the aim and objectives of the study and then translated into a codebook (Appendix 10) for

easier interpretation. During the coding process, the researcher identified important sections of text and labelled them to identify them as they relate to the themes or the issue in the data (King 2004). Significantly coding allows the researcher to simply focus on specific characteristics of the data (Nowell et al. 2017).

Themes were generated using an inductive approach of data analysis which requires proper identification from the data itself and thus a data-driven thematic form of data analysis method (Braun and Clarke 2006). This method of data analysis does not require the researcher to fit into a pre-existing researcher's preconceptions of the research topic (Nowell et al. 2017). However, in contrast to deductive thematic analysis the researcher's theoretical interest may provide a detailed analysis of some aspects but tends to give a less rich description of the overall data (Braun and Clarke 2006).

The overall process of data analysis led to formation of three major themes, nine subthemes formed from forty-six categories. The codes included: overall body needs, balanced meal, making right choices, Right proportions, Better health outcomes, excess consumption of anything, outside food, Harmful food, pre-disposing foods to NCDs, Unhealthy outcomes, Healthy lifestyle changes, weight loss management, protein, carbohydrate, good fats and oils, fruits, fibre, vegetables, fish, tea with no sugar, brown bread, sima and home cooked meals, fast foods, eating at night, large food volumes, lots of refined sugar/carbs, Alcohol consumption, carbonated drinks, pizzas, sandwich, knowledge of body needs, few obese people in Africa, self-prepared food is healthy, African soups, swallow, ebar, fufu, melon soup, rice, beans are healthy foods, obesity, malnutrition, NCDs are unhealthy outcomes, keeping family meals, health concern, cultural norms, peer influence and support, cost, time, religious beliefs, sedentary lifestyle, enjoys eating, cooking skills, to explore foods, advertisement, accessibility, social media, government policy, location changes, weather conditions, availability, don't purchase unhealthy, planning well, eat when necessary, advertise healthy foods and personal responsibility.

The sub-themes were concept of healthy dietary choices, concept of unhealthy dietary choices, perspectives and examples of dietary choices, General socio-economic factors, individual lifestyle factors, social and community networks, Environmental conditions, most influential factors and healthier choices promotion.

The three major themes included: Concept and perspectives of healthy and unhealthy dietary choices, perceptions of factors

influencing dietary choices and solutions to healthier choices. It is important to note that themes are broader than codes which come as a result of combining codes (Jack 2019).

The advantage of using thematic analysis is that it does not require a detailed theoretical and technological knowledge of other qualitative approaches making it a more accessible form of analysis particularly for those early in the research process (Braun and Clarke 2006).

It was also argued that thematic analysis is a useful method for examining perspectives of different research participants, highlighting similarities and differences as well as creating unexpected insights (Braun and Clarke 2006; King 2004). However, the lack of literature on thematic analysis compared to grounded theory and ethnography may make in-experienced researchers to feel unsure of how to conduct a rigorous thematic analysis (Nowell et al. 2017). Although it has some degree of flexibility, but this flexibility can lead to inconsistencies and lack of coherence when developing themes derived from the research data (Holloway and Todres 2003).

## 8. Rigour

Rigour in a naturalistic inquiry of phenomenology was established using the criteria of credibility, transferability, dependability and confirmability (Cypress 2017).

Credibility of the study was enhanced using data from participants by taking their quotes that were obtained from the interviews. Interviews were done using an evidence-base interview guide with semi-structured questions well designed to answer the research question and capture an in-depth exploration of the student's perceptions of factors that influence them to make healthy or unhealthy dietary choices (Britten 2006). The thematic data analysis criteria were another strategy that was used to enhance credibility of the study because it was consistently theoretically supported by a constructionist paradigm (Braun and Clarke 2006). This involved reviewing data several times to ensure that appropriate data was identified to make sure that it answers the the aim of the study (Braun and Clarke 2006). Also referred to as triangulation the researcher made sure that data was cross-checked and interpretations within each category of participants by another person (Cypress 2017). Peer examination was ensured through the supervision time with the researcher's supervisor and a lecturer to ensure enough support was provided in terms of assistance and resources.

Transferability which refers to generalizability of the study (Nowell et al. 2017). However, in qualitative research this is

limited to case to case transfer (Tobin and Begley 2004). For this study transferability was enhanced through the selection of a participants from a sample of Coventry University students. Therefore, purposeful sampling was the strategy used to enhance transferability within the study population specifically the inclusion criteria. However, the sample size was not representative of the whole student population (leard dissertation 2012).

Dependability of the research was ensured through a logical, traceable and a clearly documented process of the study (Tobin and Begley 2004). Dependability is to do with stability of the findings over a period and how findings and interpretations and recommendations of (Korstjens & Moser, 2018)he study are supported by the data received from the participants.

Comfortability was aided by an inductive method of data analysis through which the researcher's interpretation and findings were clearly derived from the data which required the researcher to demonstrate how conclusions and interpretations were reached (Tobin and Begley 2004).

#### IV. FINDINGS

The aim of the study was to explore Coventry University students' perceptions of factors influencing them to make healthy or unhealthy dietary choices. This section will describe the themes in turn and how often the themes came up, their meaning including quotes from the data as evidence (Jack 2019). Ethical considerations will be used to identify participants with their identification numbers to reserve their right of anonymity.

##### 1. Participants

Five participants took part in this study and all of them were male students due to exclusion of one female participant who could not participate due to confidential reasons. However, this did not affect the desired outcomes although inclusion of female participants would have provided unique data independent of the male gender especially emotions in eating habits among the female is showed to be higher in female than in the male gender (Drapeau et al. 2003).

All participants were international students four of them from Africa and one participant from the middle-east. The participants countries of origin were Nigeria, Ghana, Zimbabwe and Jordan each representing a different culture that indicated diversity in culture which influenced their dietary choices and hence the nature of results as well. According to a study done at the University of California san Francisco (2019),

participants in research should reflect the diversity of our culture and conditions, considering race, ethnicity, gender and age because the lack of diversity has serious ethical and research consequences.

##### 2. Thematic Analysis Findings

The aim was to explore students' perceptions of factors that influence them to make healthy or unhealthy dietary choices. The students expressed several factors they perceived to influence their dietary choices and generally all students perceived cost, Family and time as the major factors influencing their dietary. Cost was perceived in terms of affordability and generally attributed to healthy foods being expensive to afford and yet its cheaper to purchase unhealthy foods which were classified as fast foods, snacks, carbonated drinks. However, one participant differed from other participants regarding cost, elaborating that it was cheaper for him to eat healthy and therefore cost only influenced his healthy choices.

Simone (2003) highlighted in a study on pricing effect on food choices that people may posses the knowledge about healthy food choices but when considered in terms of price and taste they often choose the tastier and cheaper ones but less nutritious. Time was another general factor that students perceived to influence their dietary choices in terms of school schedules and time to prepare the food. A study by Deliens et al. (2014) highlighted that students indicated that they would rather spend time on other things other than cooking especially when they must cook for themselves. However, other factors classified under socio-economic, individual lifestyle factors, social and community and environmental factors emerged. These included among others (health concerns, family meals, cultural norms, peer influence, time, knowledge and religious beliefs), Social and community factors included (Advertisements, Accessibility, social media and government policy) Environmental factors included (Location changes, weather conditions and availability), individual life style factors included (sedentary lifestyle, cooking skills and exploration of other foods. These factors were consistent with studies from (Deliens et al. 2014, Kabir et al. 2008, Michelle et al. 2018 and Hsieh 2004).

Thematic analysis of the data that emerged from students created 3 major themes, 8 subthemes from several categories that were coded. The 3 major Themes were.

- Concept and perspectives of healthy and unhealthy choices.
- Perceptions of factors influencing dietary choices.
- Solutions to healthier choices.

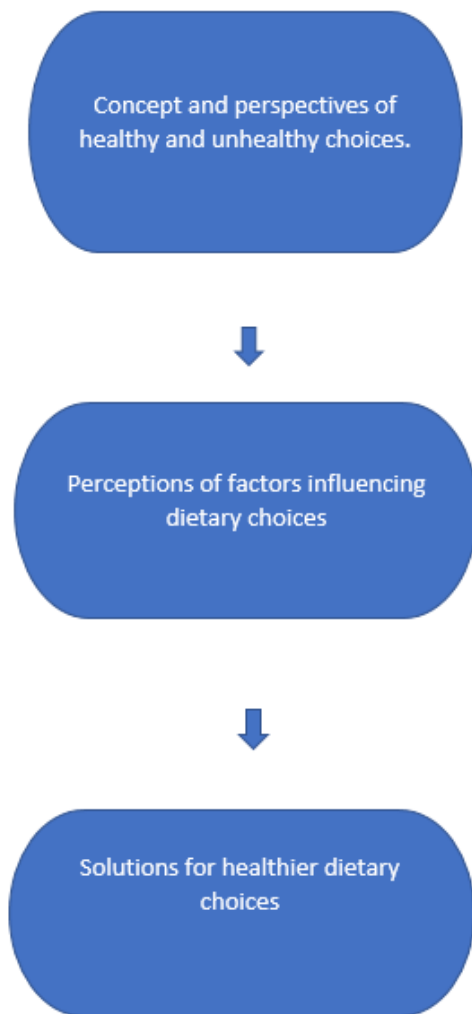


Fig 2. A summary of Major Themes that emerged from the study.

Table 1. Summary of first Major Theme That Emerged.

| Theme 1: Concept and Perspectives of Healthy and Unhealthy choices. |                                      |
|---------------------------------------------------------------------|--------------------------------------|
| Sub-theme:                                                          | Concepts of Healthy Dietary choices  |
|                                                                     | Categories                           |
|                                                                     | - Overall body needs                 |
|                                                                     | - Balanced meal                      |
|                                                                     | - Making the right choices           |
|                                                                     | - Right proportions                  |
|                                                                     | - Better health outcomes.            |
|                                                                     | Concept of unhealthy dietary choices |
|                                                                     | Categories                           |

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sub-theme: | <ul style="list-style-type: none"> <li>- Excess consumption</li> <li>- Outside food</li> <li>- Eating harmful food</li> <li>- Pre-disposing foods to NCDs</li> <li>- Unhealthy outcomes</li> </ul>                                                                                                                                                                                                                                                                      |
| Sub-theme: | Perspectives of dietary choices                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|            | Categories                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|            | <ul style="list-style-type: none"> <li>- Making healthy lifestyle</li> <li>- Weight loss management</li> <li>- Examples of healthy foods</li> <li>- Examples of unhealthy foods               <ul style="list-style-type: none"> <li>- Knowledge</li> </ul> </li> <li>- Few Africans are obese</li> <li>- Self-cooked foods are Healthy               <ul style="list-style-type: none"> <li>- Examples of NCDs</li> </ul> </li> <li>- Keeping Family meals.</li> </ul> |

Table 2. Summary of second theme

| Theme 2:   | Perceptions of factors influencing dietary choices                                                                                                                                                                                                                                                                                                     |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sub-theme: | General socio-economic Factors                                                                                                                                                                                                                                                                                                                         |
| Sub-theme: | Categories                                                                                                                                                                                                                                                                                                                                             |
|            | <ul style="list-style-type: none"> <li>- Health concerns</li> <li>- Family meals and support               <ul style="list-style-type: none"> <li>- Cultural norms</li> <li>- Cost</li> </ul> </li> <li>- Time (school schedules)               <ul style="list-style-type: none"> <li>- Knowledge</li> </ul> </li> <li>- Religious beliefs</li> </ul> |
|            | Individual lifestyle Factors                                                                                                                                                                                                                                                                                                                           |
|            | Categories                                                                                                                                                                                                                                                                                                                                             |
|            | <ul style="list-style-type: none"> <li>- Sedentary lifestyle</li> <li>- Cooking skills</li> <li>- Exploration of foods</li> </ul>                                                                                                                                                                                                                      |
| Sub-theme: | Social and Community networks                                                                                                                                                                                                                                                                                                                          |
| Sub-theme: | Categories                                                                                                                                                                                                                                                                                                                                             |
|            | <ul style="list-style-type: none"> <li>- Advertisements</li> <li>- Accessibility</li> <li>- Social media</li> <li>- Government</li> <li>- Peer influence</li> </ul>                                                                                                                                                                                    |
|            | Environmental Conditions and most influential factors                                                                                                                                                                                                                                                                                                  |
|            | Categories                                                                                                                                                                                                                                                                                                                                             |
|            | <ul style="list-style-type: none"> <li>- Location</li> <li>- Weather conditions</li> <li>- Availability</li> </ul>                                                                                                                                                                                                                                     |

|  |                                                           |
|--|-----------------------------------------------------------|
|  | Most influential factors<br>Time, cost, Family and Health |
|--|-----------------------------------------------------------|

Table 3: Summary of the 3<sup>rd</sup> Theme

| Theme 3:  | Solutions to healthier dietary choices                                                                                                                                                |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sub-theme | Healthier choice promotion                                                                                                                                                            |
|           | Categories<br>- Don't purchase unhealthy foods in bulk.<br>- Planning well to counter time and cost<br>- Eat when necessary<br>- Advertise healthy foods<br>- Personal responsibility |

Tables 1,2 and 3 represent the three major themes and sub-themes from the different categories

### Concepts and perspectives of healthy and Unhealthy dietary choices

This theme emerged as a result of meanings and opinions students attached to their understanding of healthy and unhealthy dietary choices. Participants attached different meanings to the concepts regarding healthy and unhealthy dietary choices each derived from an independent experience. The sub-themes and categories that led to the emergence of this them included:

#### Concept of healthy dietary choices

Participants expressed different perceptions regarding their understanding of the concept of healthy dietary choices although generally they all referred to healthy dietary choices as a positive aspect in terms of what the body needs. The categories included:

- Overall body needs
- Balanced meal
- Making right choices
- Right proportions
- Better health outcomes.

And this is what participants said:

- "Ah, my understanding- what I know. We have carbohydrate, protein, fat and all body need that. " (P001 Q1)
- " No with me I eat a healthy meal I cook my food at home, and I try make sure I balance my meal it's not like I don't eat the junk food, but I don't make them my I only eat them when I don't have time. " (P002 Q1)

- "Is just making the right choices on what to eat in order to live to lead a healthy lifestyle. So, its knowing what to know what to eat so obviously any choice you make in terms of the meals the drinks the timings yeah when to eat what to eat that's what I understand really so what I understand is that everything that you eat you must have a balanced diet. If you are ready to live a healthy lifestyle- which is easy though. "(P003 Q1)
- "Yah Healthy dietary choices can actually be food choices that can contain different classes of food like in the right proportion. " (P004 Q1)
- "Okay so with regards to healthy dietary choices I think ah there are foods when take they could lead to better health outcomes – so whats I think aah healthy dietary choices are. " (P005 Q1)
- However, unhealthy dietary choices were generally perceived to cause negative impact on the body. However, participants gave different opinions and examples from different categories which included:

#### Concept of unhealthy dietary choices

- Excess consumption
- Outside food
- Eating harmful food
- Pre-disposing foods to NCDs
- Unhealthy outcomes.

This is what participants said:

"A lot of carbs also too much carbs, anything too much for anything except I think vegetables. " " My health? Aaah I get a lot of weight-I was very fat obese like I reach obesity. " (P001 Q1) "It was just cut the bad things eating health reduce my weight (P001 Q1) "Yea if you are eat fat food whatever what it was this is unhealthy. "

"Unhealthy choice of food like I said when you keep eating well when people make these foods outside you don't know the condition in which they make the food-you don't know where they get the water from you don't get their...you don't if they wash if they use vegetables you don't know if they wash them."(P002 Q1)

"Well obviously unhealthy is just eating things that don't really contribute to the bodies development so it could be harmful things like aaah excessive alcohol-things like aah may be eating same time false food that may be harmful to health in a long run things like you know like junk food you always hear junk food anyway its known It was just cut the bad things eating

health reduce my weight.that junk food is not good for the health.”(P003 Q1)

“Ahhh (text) just conversely unhealthy dietary choice would actually mean like taking some kinds of foods that could cause us that could actually pre-dispose us to some diseases especially non-communicable diseases taking them like in unhealthy amounts when constitutes like a bulk of one’s diet that could actually pose as an unhealthy dietary choice.” (P004 Q1)

“Unhealthy could am lead to am disease could lead to rare sickness that could be the differentiation between healthy and unhealthy. ” “Healthy dietary choices would lead to healthy outcomes and unhealthy would lead to otherwise.” (P005 Q1). The data that was obtained also provided students perspectives of on healthy and unhealthy dietary choices and they would able to say this:

“Yes am..am trying to do that as much as I can. Am trying to get out from the bad habit I used to do it in the past-and change it with healthy lifestyle. ” (P001 Q1)

“It’s not for short time am trying to make it my lifestyle because in the past I used to what I call (text) losing weight then back to the normal-. ”(P001 Q1).

“Well amm African and Nigerian and there some Nigerian diet so we make a lot of soups with vegetables-.” And its healthy to have plenty of vegetables but most times I can do...I can just give like what I eat I can have something like an omelette with tea in the morning in the afternoon I can have swallow... Ok we call it swallow it’s easier that way you know nigerians we have ebar or fufu.. is Yeah...(text) pounded yam we have all that so those are swallows we call them swallows Yeah with any soup of your choice you have the egusi soup which is the melon soup you have vegetable soup and so many of them and that’s for lunch- And dinner I can do with rice or beans or something. ” “Yes, if you eat what you are supposed to eat it becomes healthy.” (P002 Q1)

“In Zimbabwe its saza you know mini mill you eat mini mill maize mill? Yah they call it fufu in Zimbabwe its saza we call it saza- That’s saza in Zimbabwe-” “Ammm that’s mainly our main main diet for dinner I mean dinner as in evening meal. ” (P003 Q1)

“Number one talking lots of fruits like at least 5 servings of fruits-. ” “Actually, I had too to not leave out the drinks the healthy ones would be like adequate amounts of fruits and

vegetables and also like regulatory amounts of carbohydrates’ “And also like the fats and oils taking like the good oils fats and oils-(text). ”(P004 Q1).

“Okay so like aah fruits vegetables could have aam like different classes of food and the right amounts like amm. Like back home we always had the motion that those green leafy vegetables. ” (P005 Q1)

“The healthy ones the fruit juices I think fruit juices are healthy amm those drinks without are not so carbonated or without too much sugar I think those are the healthy drinks are good for us-. ” (P005 Q1)

“ (short laugh) for unhealthy you know ammm this fast foods that have so much fats-.” Everywhere (short laugh) Everywhere you go you see them being advertised. (P005 Q1)

“A lot of snacks crisps soft drinks a cola or pepis I was taking a lot sometimes 2 litres a day.”(P001 Q1)

#### **Students perspectives of factors influencing them to make healthy or unhealthy choices**

The aim of the study was to interview students about their perceptions of factors that influence their dietary choices and this theme aimed at extracting data that answered the research question. From what was said, the results from thematic analysis indicated that students perceived several factors from General socio-economic, individual lifestyle factors, social and community networks and environmental factors as classified by Dahlgren and Whitehead (2006). All participants indicated factors such as health, Family meals, cost, Time, Accessibility, change of location, knowledge, Religious beliefs, Sedentary lifestyle, Peer influence, Enjoyment of food, cooking skills, exploration, advertisement, accessibility, social media, Government policy, location changes, weather conditions and availability. One participant mentioned this regarding health.

“My health? Aaah I get a lot of weight-I was very fat obese like I reach obesity.” (P001 Q2) “I was 170cm aaah and-my weight was 125kg.” “Yea- then I decide to change my life. ” “ So I reduce from 125 to75. Just I said to myself I will do it and eating healthy. ” (P001 Q2)

Another Participant acknowledged that health influences his dietary choices linking it to family meals since they have always been healthy and proved nutritious without causing health problems like obesity and constipation. And he mentioned this:

“Well like I said these foods are foods you grew up with and they are nutritious if u have the diet properly you will look healthy you are strong infact you don’t get obese and all that no constipation and all those things don’t happen because you’re actually eating the right thing So its nutritious you don’t a have any-infact its nutritious to be honest. ” (P002 Q2).

This theme was common among all participants and some of them indicated health because of their health science background although not specifically from the Human Nutrition, Dietetics and Public health nutrition background.

Participants mentioned family meals as it was perceived that most of their dietary choices today were shaped by the family meals right from the younger age back home. Therefore, it is a practice that they still follow upto adulthood. A participant said that:

“ It does like aamm if or do I say habits die hard all habits die hard so if you are used to eating homemade meals Or meals that you have been introduced too from right from the young age at the family level you tend to stick in my opinion you tend to stick with those speaking personally again I still remember what we could usually have a timetable then and basically what we are going to have. So, I still follow that pattern even to adult life I left home like about 19 almost 20 years ago going to (text) house but I still follow that pattern- So I can say from a personal perspective that the family actually plays a role in influencing dietary choices. ” (P004 Q2).

All participants perceived cost as another factor that influenced their dietary choices. Unhealthy food choices were attributed to cost because most of the unhealthy food is cheaper to purchase compared to the healthy food. However, one participant positively attributed cost to healthy dietary choices emphasising that its cheaper to eat healthy because of the cheap markets around Coventry university including Sainsbury, Tesco and the Coventry market where healthy foods can be bought cheaply. These are some the quotes:

“As you know the cost the bad things include all the unhealthy things actually (short laugh) hardships so it’s easier to get like a burger that will fill you up instantly and then you just a get a drink less than one pound. ” (P004 Q2).

“Yea to being unhealthy more costly than being healthy especially here in the UK because you get all the healthy food the same price with unhealthy food. From the super markets you go to Tesco or Sainsbury you find everything healthy and unhealthy. It’s your choice what to buy. There are the frozen

eats available forexample the cheese and the chicken. ” (P001 Q2).

Time was another common factor that students perceived especially in terms of school schedules including lectures and meeting deadlines for assignments. They claimed that they could not get time to prepare meals because it takes a lot of time to prepare and eat the food as well, yet it saves time to just buy food that is already prepared especially junk food. For some participants who work and study as well they must balance between work and school schedules therefore, they cannot find the time to make their own food. Some of their quotes were:

“You know dietary choices mainly making I think the time. Time is a factor because not having the time to prepare food can be a drive for that. Because like I said we live very very busy lifestyles we have got where we go to school aaah you know but other things one or two (text) like you see how many times we should meet and seat down its never So when it comes to food choices we always try either just go for the easier option because we don’t have the time.” (P003 Q2).

Accessibility was attributed to restaurants near the campus that mainly sell unhealthy food. Another participant mentioned change of location in relation to accessibility which meant that accessing the foods they are used to is difficult since they are international students. Accessibility was also expressed in terms of distance which meant one participant to travel a long distance to purchase healthy food and some of the quotes included:

“Yah all these is easy accessible so you may know its unhealthy but at that point in time that’s what you opt for. (text) go to the city centre almost everywhere you would see a fast food there is a restaurant where you can get such kind of.... ” (P005 Q2). “Yah there are farms you can actually go to their farms abattoirs, but they are out outside the farming area like rugby the nearest would be rugby. So, you actually have to go to the outskirts to the real cuts that what we are used to. ”(P003 Q2)

Knowledge and religious beliefs are other factors that emerged attributing knowledge to health science background while another participant felt that growing up eating foods that caused no harm was enough knowledge for him to choose those foods. For another participant, knowledge was sourced from relatives, trainers and health consultants, advertisements, television and social media. One participant believed that his dietary choices were influenced by religious beliefs.

“Yeah, I had some knowledge to the nutrition. I always ask by getting help which better to lose weight which better to give you power aaaah, so I start using more drinks and then the chick peas I added more to my diet system. Family members who have more knowledge than me- aaa my (text)....my Personal trainers I ask them a lot what to eat and what not to eat.” (P001 Q2)

“You you sometimes find that side yah ok so I mean health is very important you will find yourself making choices if chance given based on your knowledge in health and what you think it can cause to you. ” (P005 Q2)

Among other factors were individual lifestyle like cooking skills, enjoyment of food and exploration of new foods. A participant perceived cooking skill as a that factor influences him to make unhealthy dietary choices because he is not able to cook his own food due to the lack of cooking skills. Another participant perceived enjoyment of food as a factor that influenced him to make his dietary choices. One participant perceived exploration of new food when he goes to a restaurant. “Yah and given the fact that you are in a new environment new kind of food comes up and you’re like what’s this I should really go and try that out. ” (P005 Q2).

“No I like food that’s the problem I enjoy it I know-this could get me regain weight give me fat not good for me. ” (P001 Q2)

Participants also perceived social media, government policy, changing weather conditions and availability as factors that influence them to make their dietary choices. The government polices was related to the sugar tax and the manufacturing industry who manufacture products based on reducing sugar in products. According to one participant the weather in the UK was perceived to influence his ability to drink water as recommended because its always cold.

“Yah like we initially said that water is part of the foods that are healthy, so I believe like since I drink less water, I drink like I drink back in Ghana, so weather has influence on the amount of water that I take. And also, with (P005 Q2).

“In terms of policy now you have clarified you have drawn more light on it. In terms of policy I think aaammm they are doing well because the effect in terms health effect in terms of a healthy dietary choices it’s much pronounced in this part of the world. So, it’s imperative that government should put polices which they are doing as mentioned with tax sugar then tobacco and so on constitutes a healthy diet. ” (P004 Q2).

Most participants perceived peer influence as a factor that influences their dietary choices. One of the participants acknowledged that especially when he is at campus he would be dragged into eating with his peers and the choice of where to eat from is agreed upon as a group and it is usually the cheapest, they would go to because they find campus food expensive and resort to the city centre.

“So you end up either being drown to the city centre or you would say come on you find something else to eat you go upstairs in the hub to find something to eat there so you know the friends you are with or whoever you socialise (P003 Q2)

However, one participant perceived peer influence as a positive influence saying that the peers, he associated with were a positive influence on his dietary choices.

“Influence me in a good way like if am losing weight or psychologically losing weight keep going. They will always come with me the gym when I was back. ” (P001 Q2)

#### **Most influential factors**

Participants acknowledged that they perceived several factors that influenced their dietary choices however, the most influential were cost, time, health and family. They highlight that because one has grown up eating family meals it is always difficult to change from this and therefore this kind of perception dominates his dietary choice.

“Influences my choice of food Well it’s the family. Family influences my choice of food like I said this is something I know from a long time ago even when I don’t have the money and I know where I can go and get it. ” (P002 Q2)

Another participant perceived health as the most influential factor highlighting the need to keep healthy for the later years to come especially the 60s and 70s.

“So, what you make choice now this is what you will get it in your 60s. So am making my body now healthier to survive 60s and 70s (text) atleast. ” (P001 Q2)

Participants were asked about possible challenges they face when making their dietary choices and they perceived time, cost, availability of health products as challenges or barriers to healthy dietary choices. One participant highlighted that his challenged by his own commitment to choosing healthy choices. Another participant said that his religious beliefs sometimes can be considered as a barrier when making dietary choices.

"And it's easy to slip from the road it's very easy. Just you need you know self-confident I can do that this is better for me." (P001 Q2)

"..... To me I think it's the time really time and cost really affect us I mean these are the main ones with us." (P002 Q2).  
"Availability is key then cost just keeps coming up (short laugh)-cost the cost of getting just keeps coming up." (P004 Q2).

"Okay I would say in addition to (text) for my religious beliefs also play a major because I I (text) I don't take alcohol so no matter what the cost no matter what those are the things I would not take so my personal belief my religious beliefs are barriers yah will prevent me from making some choices in regards to food (short laugh)." (P005 Q2)

#### **Solutions to healthier choices.**

This theme emerged from categories suggesting how participants would mitigate the factors that lead to unhealthy dietary choices. These categories led to formation of a sub-theme named healthier choice promotion and the categories were: Don't purchase unhealthy foods in bulk, Plan well, eat when necessary, Advertise healthy food and personal responsibility. These categories emerged from these quotes:

"If you wanna eat unhealthy food go buy it and eat it don't keep it. Don't buy in bulk and store it." (P001 Q3)

"Planning I think for like I said if you are in school or something or you are working if you plan yourself properly and say ok amm I won't be free during the week and free at the weekends let me make my meal and keep them for the week." (P002 Q3).

"Okay from my own perspective I would say amm if the healthy foods are advertised more I think people would tend partake of these healthy diets like know if you hardly watch the TV and see them advertise the fruits or anything you just see them burgers fast foods and those things I think if much of the advertisement is put into healthy foods it can influence the choices of people." (P005 Q3)

#### **Summary**

The results from this study confirmed that Coventry university students' perceptions of factors that influenced them to make healthy and unhealthy dietary choices were explored. They also indicated that students perceived the concept of healthy and unhealthy dietary choices with different perspectives on what healthy and unhealthy dietary choices were.

An inductive thematic analysis that was used for this study explored several factors from the student's perspectives regarding their dietary choices which included costs, time, peer influence, family meals, health, knowledge, accessibility, availability, cooking skills, weather conditions and location. However, the results also indicated that students faced challenges like costs, time, self-confidence and religious beliefs although possible solutions for healthier dietary choices were suggested which included well planning, advertisement of healthier foods, eat when necessary and don't purchase unhealthy foods in bulk. These results prove that the aim and objectives of the study were met.

## **V. METHODOLOGICAL DISCUSSIONS**

This chapter involves the discussion of the results, strengths and limitations of the research, methodological qualities of the study and implications of the research to Public Health.

### **1. Results Discussion**

#### **Concept and perspectives of Healthy and Unhealthy dietary choices.**

Students in this study subjectively perceived healthy dietary choices as overall body needs, balanced diet, making the right choices, taking the right proportions and foods that provide better health outcomes. The results indicate that students understood the concept of healthy dietary choices from what they said. However, Andrea (2012) a registered dietitian highlights that there is no single definition of healthy eating and all that was said by the students could contribute to healthy eating. However, a participant perceived healthy food choices in terms of making lifestyle changes relating it to weight loss management because he experienced a lot of weight gain which made him obese. It is important to understand that prevention of obesity and weight gain (Roger et al.2012) and its related diseases has become a global challenge (Ogden et al.2012).

According to literature from the US, students need to adapt to a new environment when transiting from secondary to university (Dyson and Kimberly 2006: Von et al. 2004) because if they fail, this could have negative impacts to their health lifestyle and consequently weight gain (Popkin & Gordon-Larsen, 2004). Therefore, it is wise to understand that lifestyle behaviour including physical activity and sedentary lifestyle factors influence students' weight.

Participants also perceived healthy dietary choices in relation to consumption of foods proteins, carbohydrate, good fats and oils, fruits and vegetables, chicken, fish, tea with less sugar, brown bread and home cooked meals including family meals.

In a qualitative study by Sam (2006), he highlighted that students considered consumption of functional foods as named above to be healthy and that preparing their own food would give them an idea of what was inside what they eat. However, the researcher noted that although students expressed their knowledge of healthy dietary choices, there was a gap between knowledge and actual practice of making healthy choices.

Unhealthy foods were perceived as fast foods, eating at night, eating large volumes of food, eating lots of refined products and alcohol consumption. They acknowledge from various perspectives that excess consumption of food, foods prepared outside home, and foods that pre-dispose to Non-communicable diseases like obesity and malnutrition. Unhealthy diets are the primary risk factors for non-communicable disease (Jina et al. 2015) and University students are known to engage in risky lifestyle behaviours including risky eating habits (Jina et al. 2015). In a qualitative study by Sam (2006), participants associated unhealthy foods with foods high in fat and saturated, deep fried and processed foods. In this study students indicated their knowledge of unhealthy dietary choices however most of them confirmed that they are highly influenced to consume unhealthy choices because of their perceptions of several factors as discussed in the next theme.

#### **Perceptions of factors influencing students' choices of healthy and unhealthy dietary choices**

This study showed how Coventry University students perceived the factors that influenced them to make healthy or unhealthy dietary choices. The findings confirm that cost of food for University students influences their dietary choice with a strong belief that healthy food is costly while unhealthy food is cheap (Harris et al. 2006). Consistent with other studies, students perceived time as factor that influences their dietary choices.

Time is considered precious when talking about students eating practices because they prefer to spend time on other activities rather than preparing their own meals which are always perceived to be healthy (Deliens et al. 2014). Peer influence was another result of this study which confirms that students acknowledge that peers influence them to make mostly unhealthy dietary choices while home prepared meals are considered healthy. Family meals was a common factor to students, and it was one of the most influential factors. Savage et al. (2007) indicated that parents select foods for the family diets, serve as models of eating that children emulate and use feeding practices to encourage the development of culturally eating patterns.

Health and knowledge are two factors that students also perceived to influence their dietary choices. A general perception exists that students of health sciences have a greater knowledge about healthy dietary habits and lifestyle compared to non-health science students although studies have showed that medical and paramedical students staying at hostels are susceptible to irregular dietary habits, lack of exercise and addiction (Sajwani et al. 2009). In this study, students highlighted accessibility/availability and as a factor due to difficulty in accessing healthy food. Consistent with Deliens et al. (2014), students have easy access to on campus facilities to which they are easily tempted to a variety of meals which influence them depending on their choices. The ability for students to cook their own food was another factor that influenced their dietary choices which also requires time and the cooking skills that they may not have.

A qualitative study identified that cooking skills, confidence, time and effort required to prepare food were considered by participants to influence their food choices (Michelle et al. 2018).

Environmental aspects like weather changes and change of location were also perceived to influence dietary choices. These are physical factors that can be interpreted in terms of accessibility and ability to take some foods. A participant highlighted that the ability to take water as required was affected by the cold weather in the UK compared to how easy it would back home. Some participant felt that they sometimes try out new foods due to advertisements on the media including social media. Very little details were provided on media and how it influences the participants dietary choice in this study. However, what is known is that media especially social media may negatively influence perceptions of healthy eating although it may also provide potential solutions (Michelle et al. 2018).

Students perceived family meals, cost and time as the most influential factors. This is in line with several studies from (Sogari et al. 2018, Deliens et al. 2014, Dhillon et al. 2019, Kabir et al. 2018, Michelle et al. 2018, Hsieh 2004) that have confirmed these factors to be associated with students' choices of foods. However, when asked about possible barriers to healthier food choices, the same factors kept coming back including costs, time for school schedules and religious beliefs was one unique factor that emerged. A report has indicated that religion has a protective effect against risky health lifestyle behaviours like alcohol consumption (El Ansari et al. 2014: Atwell et al. 2011) and use of drugs (Gomes et al. 2013: Suerken et al. 2014). In this study, religion was perceived as a

barrier in contrast with what was reported above. However, religion has not previously been associated with healthy or unhealthy eating behaviours but has been reported to support healthy lifestyle choices through cultural aspects (Eckersley, 2007) and social support and prescription of expected behaviours (Williams and Sternthal, 2007).

### **Solutions to Healthier Choices.**

To mitigate the factors that challenged students to make healthier choices, they suggested healthier promotion strategies from categories that included planning to mitigate costs and time, by preparing meals in bulk and stock for some time. It saves cooking time and preparation as well as cost of purchasing food all the time. It was also suggested that students don't purchase unhealthy food in bulk because it can easily prompt choosing to eat those foods. A participant suggested eating when necessary and taking personal responsibility as well as advertising healthy foods. A report by Menozzi et al. (2015) has supported enablers like personal responsibility and eating when necessary by suggesting that the intention is the main factor in predicting behaviour of healthy consumption of food like fruits and vegetables which seem easily achieved if students plan their own meals. Jina et al. (2015), re-affirmed the role of university microenvironment and suggested explanations on financial restrictions and availability of healthy meals (ElAnsari et al. 2012) and food availability on campus (Deliens et al. 2014; Symonds et al. 2014).

### **2. Implications of the Findings to Public Health.**

The relationship between University students and dietary choices is of great concern to Public health. Therefore, the topic regarding food and health is of growing importance to the public agenda (Grunert, 2017). It is important for the University and other community stakeholders in public health to understand the link between diet and health among University or College students and use it to develop programmes and behavioural change strategies to improve their lifestyle and reduce diet-related diseases (Blondin et al. 2016).

This study highlights the need for the University to empower students with more knowledge regarding their Recommended Daily Allowances. Although students had the knowledge concerning healthy and unhealthy diet, a lack of an in-depth knowledge on what amounts should be taken daily was lacking therefore there is need for more nutritional campaigns if student's nutritional status and dietary choices must improve. As highlighted by Michelle et al. (2018) accurate information regarding portion sizes is required to translate current nutrition information into action required to improve their lives.

This study also highlights the importance of the University facilities to provide healthy food choices, promote physical activity, provide food preparation lessons to make students more knowledgeable about cooking and meal planning (Sogari et al. 2018)

### **3. Strengths of the Research**

Validity of this research was enhanced by a conducting all the research activities within the ethical standards as was required and approved by the Coventry University research committee to ensure that it attained its aim and objectives without violating the ethical boundaries because it dealt with a sensitive study that could have caused distress to the students.

The theoretical support and qualitative method used in this study that seeks to explore people's perceptions, beliefs or opinions based on an interpretive/constructivist paradigm (Creswell 2003 p.8). Therefore, the research method that was used strengthens this study because it is used to answer questions about experience, meaning and perspectives from the standpoint of the participant (Hammarberg et al. 2016).

Participants were all international students from different countries which ensured diversity in the research. This to was enhance the trustworthiness of the research by ensuring that ethical requirements (University of California san Francisco 2019) are observed by avoiding bias. This strengthens this study because different experiences from different ethnicities and cultural values were explored.

The research was conducted using semi-structured interviews using a guide that was evidence-based with open-ended questions to capture in-depth views and free expression of these views from participants. This process strengthened the research because it allows divergence of the research findings from the participants (Britten 2006).

Reflectivity was maintained by keeping a record of the whole process (Appendix 11) which kept the research open and transparent (Erlinda et al. 2017) with constant review by the supervisor to ensure that the results of the research are credible and meeting and aims and objectives. Furthermore, an inductive thematic analysis that involved manual transcription of data and then coding to form themes, sub-themes that emerged from categories directly quoted from what participants said from data that was transcribed.

### **4. Limitations of the study.**

The study had limitation of the small sample size which is however considered perfect for a qualitative method of

research. However, Faber and Fonseca (2014) argues that an appropriate sample size renders the research more efficient although very small samples undermine the internal and external validity of the study.

Time constraints was another limitation because the volume of data makes analysis and interpretation time consuming (Anderson 2010).

## VI. CONCLUSION

This research explored students' perceptions of factors influencing their choices of healthy and unhealthy dietary choices. The results showed that students understand the concepts of healthy and unhealthy dietary from their own perspectives since there is no single definition of healthy dietary choice (Andrea 2012). Students expressed different perceptions of factors influencing their dietary choices with most common being cost, time, family influence and health. However, several factors were perceived to influence their choices as well as acting as barriers to healthier food choices. Possible healthier solutions were suggested by the students however, the overall results suggest that there is need to improve University students' dietary choices and behavioural lifestyle because unhealthy diets are known risk factors for overweight and obesity (Cecchini 2010). Non-communicable diseases continue to be the leading cause of disability, chronic diseases and mortality globally (WHO 2013). Although there is evidence that health and lifestyle behaviours co-exist among university students (Burke et al. 1997), only one study included more than one indicator of eating behaviour (Al-Nakeeb et al. 2015).

Therefore, it is wise to suggest that more research is needed to understand the factors that influence University students to make to healthy food choices as well as provision of facilities by the Universities that will encourage and educate and support students' dietary habits and behavioural lifestyle. The need for the future research to incorporate female participants is also important to explore more factors that may come up as a result of gender.

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