3 MAKING HEALTHFUL FOOD CHOICES: UNIVERSITY EMPLOYEE PERCEPTION OF NUTRITIONAL INFORMATION ON RESTAURANT MENU

Abednego Kofi Bansah

Abstract

Nutrition-related illnesses continue to pose challenges for healthcare providers and as such, people are encouraged to look into meal constituents, especially in the hospitality industry. This study sought university employees' general perception of nutritional information on restaurant menus. Data was purposively obtained from employees who patronized restaurants on the university campus. Descriptive statistics and an independent samples t-test were used to analyze the data. Results indicated that respondents had some form of perceived knowledge of nutritional information with calories and cholesterol, reported as the most important information to be provided on menus. There was a statistically significant difference between females and male respondents with females showing a greater positive perceived nutritional knowledge than their male counterparts. University employees had a high perceived expectation of the provision of nutritional information on menus of restaurants on campus. Implications for restaurants on campus to provide nutritional information on menus that can guide healthier food choices and the University's management involvement in encouraging individuals to develop and maintain better eating habits are also discussed.

Keywords: nutrition information, restaurant menu, university employee, food choice, training

INTRODUCTION

One of the five major risk factors that have contributed to the rise of noncommunicable diseases (NCDs), is nutrition-related illnesses (World Health Organisation [WHO], 2019). Nutrition-related illnesses as a result of unhealthy diets continue to pose challenges for healthcare providers (Musaige, 2011; Ng, et.al., 2011; Perk, 2017; Vorster, et al., 2011; WHO, 2017). Nutrition-related illnesses have become so pervasive that they have been likened to global warming (Narayan, Ali, & Koplan, 2010). As a result, individuals are more health conscious and more concerned with the nutritional information of what they consume (Addison-Akotoye & Amenumey, 2017). The hospitality industry has accordingly responded with restaurant menus now being more focused on nutrition-related information as compared to the traditional details on quantity, quality, price, presentation and food preparation (Thomas & Mills, 2008; Din, et al., 2012a).

In recent times, customers have raised the bar higher and are calling for a greater level of nutritional detail on the menu. Customers now expect restaurateurs to provide information on the calorie, sugar, protein, carbohydrates and fat contents on the menu (Din et al., 2012a; Din, et al., 2017). It is suggested that the availability of nutritional information on restaurant menus would aid customers in making healthier choices (Azman & Sahak, 2014; Kiszko, et. al., 2014). A between-subjects experimental design that assessed whether the inclusion of kilojoule labelling alone or accompanied by further nutrition information on menus, led adults to select less energy-dense fast food meals (Morley, et. al., 2013). This study further emphasized the importance of having disclosure of energy content on menus at restaurant chains as this policy initiative could potentially yield health benefits at a population level (Morley et al., 2013). Likewise, a study

University of Cape Coast, Department of Hospitality and Tourism Management.
E-mail: abednego.bansah@ucc.edu.gh
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conducted by Wei & Miao (2013), to examine the effect of calorie information disclosure on consumers' food choices at restaurants, revealed that menu content disclosure affects consumers' food choices. This is further reported by the University of California's Center for Weight and Health in 2009 when it was revealed that:

> On an annual basis, nutritional information could reduce the average adult fast-food patron's yearly intake by 9,300 calories preventing the equivalent of 2.7 pounds of weight gained per person per year and if customers see the nutrition information, it could prevent around 40 million pounds of weight gain annually for the entire state of California. (University of California, 2009, cited in Din et al., 2012a, p. 414).

It would therefore appear that the debate about whether or not to provide nutritional information has been decisively settled in the literature. What remains contentious is the capacity of the consumers to accurately estimate the nutritional content (Burton, et al., 2009) and most importantly, whether providing nutritional information on menus promotes healthful food choices in restaurants (Ellison, et al., 2014; Musiker & Kesa, 2014; Sinclair, et al., 2014; VanEpps, et. al., 2016).

This is further reiterated by Long, et al (2015, p. 11) who are of the view that "menu calorie labelling is a relatively low-cost education strategy that may lead consumers to purchase slightly fewer calories". The literature identifies some factors which shape individual perceptions of nutritional information in restaurant menus. Gender for example has been found (Chen, et al., 2015; Din et al., 2012a; Krešić, et al., 2018) to be a major determinant with females being more likely to use such information. Two surveys that examined supermarket shoppers' views of food label nutrition information terms reported that more women wanted information on the total amount of sugar, and the amounts of added sugar, dietary fibre, salt and starch, as well as health claims, and details of irradiation status on food label as compared to men (Worsely, 1996). So far, the literature has paid disproportionate attention to the gendered differences in the utilization of nutrition information. Yet it is important to understand the wider dimensions of requesting and usage of nutritional information.

Information on the other determinants of utility is quite few and far between in the literature. This paper therefore seeks to further explore the phenomenon through the perspectives of staff of a typical university environment. The University environment provides a useful context for such a study for three reasons. First, it is one which has very high literacy rates. Secondly, the predominantly sedentary nature of work implies a possible high level of health consciousness (Addison-Akotoye & Amenumey, 2017) and finally, there are a wide variety of food choices for patrons owing to the large number of eateries and therefore, a greater likelihood of them requesting nutritional information. This study therefore sought university employees' general perception of nutritional information on restaurant menus.

LITERATURE REVIEW

Nutrition in Higher Education Setting

In a study to characterize food consumption and to determine the contribution of food consumption among employees of a University, it was reported that the majority (92.8%) of the University employees select to have meals at the workplace, with food consumption at the workplace contributing about 42.6 per cent of carbohydrates, 39.4 per cent of total fat and 36.8 per cent of proteins for daily intake (Lima, et al., 2018). This study further indicated a huge amount and contribution of daily sugar (48.4 per cent) intake at the

workplace (Lima, et al., 2018). In another study to examine eating behaviours, food choices, health beliefs, and attitudes of University employees, it was reported that overweight individuals were less confident in making healthful food choices and were more influenced by food choices available at on-campus dining facilities (Freedman, & Rubsinstein, 2010). This study concluded that universities need to improve on-campus access to healthful foods (Freedman, & Rubsinstein, 2010). The outcome of these studies reiterates the need for consumer awareness for a more balanced food intake.

Even though available literature suggests that providing nutritional information on a menu may help customers make healthier eating choices (Chen, et. al., 2015; Din et al., 2012a; Krieger, et.al., 2013), most of these studies were conducted in developed countries. Also, this study area does not promote a balance between physical activity and food intake, and it is easy to find and purchase a large variety of meals that lack standardization in portion sizes within the restaurants on campus. This is in part because there is a greater value placed on the quantity of food for a lower price. Furthermore, with a paucity of data in the Ghanaian restaurant contextual setting, this study examined University employees' general perception of nutritional information in the restaurant menu. It is reported that attitudes toward the amount of nutritional information and toward the credibility of its source correlated directly to the amount of nutritional information (Hwang & Lorenzen, 2008). Furthermore, the more nutritional information presented, the more helpful the information and the more credible the source (Hwang & Lorenzen, 2008). Research indicates that participants' nutrition-related and overall attitudes toward a menu item are influenced by the provision of nutritional information (Hwang & Lorenzen, 2008). According to Din et al. (2012a, p. 419), customers probably get used to these nutrients which were normally highlighted in packaged, canned food, and beverage products.

The Nutrition Knowledge Debate

The traditional challenge with nutrition and its knowledge has always been how to bridge the understanding between what nutritionists, customers and society want to know in terms of scientific needs and interests. Two surveys that examined supermarket shoppers' views of food label nutrition information terms reported a divergence between consumers' and experts' views of the usefulness of label information (Worsley, 1996). This study indicated that consumers were less interested in energy content and dietary fibre, but more interested in a variety of other constituents such as cholesterol and flavourings (Worsley, 1996). The outcome of this study emphasized the need for food product labels which more fully reflect consumers' perceptions of foods, especially information about additives and negative nutrients (Worsley, 1996). This study emphasized the need to negotiate the different perspectives of consumer groups, regulators, nutrition educators and industry personnel about label design and content (Worsley, 1996). A study that examined the relationship between knowledge and conception of University students gained from school's curriculum with their nutritional behaviour and lifestyle revealed that science students and non-science students have almost the same nutritional knowledge level and the same nutritional behaviour but science students had far better nutritional conception (Hussein, et al., 2018). In another study that determined the nutrition knowledge, attitude and food habits of college students, the authors reported that physical education students scored highest in nutrition knowledge, and business management scored lowest (Barzegari, et. al., 2011).

Factors which have been known to be vital for food behaviour include The perceived

consequences of the behaviour; Attitudes and beliefs about the behaviour and the object of the behaviour (e.g. perceptions about 'value for money'); Skills like knowing how to shop and how to cook; Confidence in being able to perform the behaviour; and, The social and physical, internal and external environment (Baranowski, et al., 1999; Worsely, 2002, p. 582). While the debate on the relationship between nutrition knowledge and food behaviours will linger, that is, in terms of its association to healthy eating (Wardle, et al., 2002), socioeconomic status (Davies, 2000), gender (USDA, 2000) and difference in nutrition interest (Chew & Palmer, 1994), the understanding of what entails nutrition and nutrients, requires careful examination. Furthermore, Worsely, (2002) also bemoaned the scarcity of data reflecting a relationship between nutrition knowledge and food behaviours due to the following:

1. Poor conceptualization of nutrition knowledge
2. Lack of relevance (e.g. knowledge of cholesterol may be more relevant to 60-year-olds than to 16-year-olds).
3. Poor measurement – There is a lack of well-validated nutrition knowledge instruments, which measure knowledge that is of relevance to both consumers and nutritionists.
4. Poor matching of knowledge and outcome variables (e.g. we cannot correlate a person's knowledge of world malnutrition with their use of vitamin supplements).
5. Many studies have been slight and did not have the statistical power to detect the influence of nutrition knowledge on food behaviours (Worsely, 2002, p. 584).

Knowledge is developed and used to meet individual goals and purposes. However, the answer to whether consumers and nutritionists share the same goals remains to be seen. In a study to measure consumers' need for and attitudes toward nutritional information on menus, it was reported that the provision of nutritional information could promote eating out more often among higher-income earners and college-educated strata (Bharath & Foster, 2009).

The acquisition of knowledge helps us to explain vital aspects of the world and gives predictability to events, thus meeting the human need for cognitive consistency or predictability (Worsley, 2002). Grunert, et al (1993), provided an approach to the lifestyle concept in analysing consumer behaviour. The approach, which was cognitive-based, explained lifestyle as *a mental construct which explains, but is not identical with, actual behaviour* (Grunert, et al., 1993, p. 12). Based on modern cognitive psychology, Grunert, et al., (1993) developed a cognitive model which relates lifestyle to other cognitive categories, and also how they are related to behaviour. Grunert and colleagues (1993) proposed approach was based on the assumptions that:

> While human behaviour can be explained by a cognitive paradigm, cognitive structures consist of declarative (vital for a persons' survival of which various types of nutritional knowledge falls) and procedural knowledge (the cognitive representation of a sequence of acts, or motions, or behaviours, which is typical for a given task). Furthermore, objects in the environment become relevant to a person only to the degree to which they are related to that person's self-concept, as mirrored in its system of goals and values. This linkage can be stored as a system of associations in cognitive structure, and can then influence behaviour without becoming conscious,

> or can be formed by conscious thoughts in a problem-solving situation. The linkage can involve both procedural and declarative knowledge (p. 12-13).

The assumptions were used as a basis to define consumption-related lifestyle in a new way; as "the system of cognitive categories, scripts, and their associations, which relate a set of products to a set of values" (Grunert et al., 1993, p. 13). Grunert, et al. (1993) proposed the below application to food products by delineating relevant parts of cognitive structure, and how they contribute to linking food products to values. According to Grunert, et al. (1993), the stated areas below can be regarded as possible *elements* of food-related lifestyles, because they contribute to the link between food products and values (Figure 1).

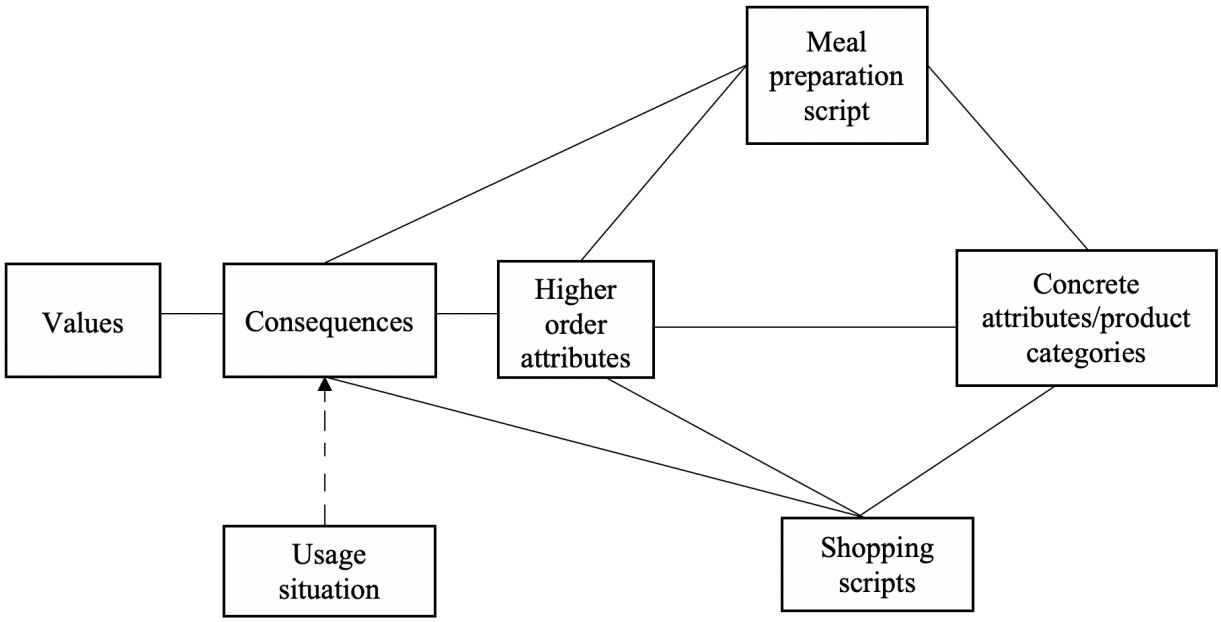

Figure 1: The Food Lifestyle Model

Source: Grunert, Brunso & Bisp (1993)

Table 1 presents the operational definition of the above elements. Within this study area, participants might have diverse values that could shape the stated elements of food-related lifestyles; however, the author is of the view that nutrition knowledge might play a pivotal role in shaping some of the elements in Figure 1 above. In that, nutrition knowledge, however its complexities might shape usage situations, desired consequences, desired higher-order product attributes and shopping scripts. While the debate on the influence of nutrition knowledge on food choices will linger, nutrition knowledge may play a pivotal role in the adoption of healthier food choices.

Table 1: Operational Definitions of the Elements

Element	Operational Definition
Shopping scripts	How do people shop for food products? Is their decision-making characterised by impulse buying, or by extensive deliberation? Do they read labels and other product information, or do they rely on the advice of experts, like friends or sales personnel? Do they shop themselves, or through other members of the family? In which shops - one-stop shopping versus speciality food shops?
Meal preparation scripts:	How are the products purchased transformed into meals? How much time is used for preparation? Is preparation characterised by efficiency, or by indulgence? Is it a social activity, or one characterised by family division of labour? To which extent does it involve technical aids? Human help? To which extent is it planned or spontaneous?
Desired higher-order product attributes	This refers not to concrete attributes of individual products, but to attributes which may apply to food products in general. Examples may be healthy, nutritious, natural, fancy, exclusive, or convenient.
Desired consequences	What is expected from a meal, and what is the relative importance of these various consequences? How important is nutrition compared to the social event? How important are emotional or feeling consequences and hedonism?
Usage situations	What are "the" meals? How are they spread over the day? Which products are typical for which meals? In which environment do they take place? Is a meal perceived differently when eaten alone, rather than with the family? With friends, guests?

Source: Grunert, et al., 1993, p.14.

METHODS

Study Design

A descriptive survey study was employed in this study. The study was conducted within one of the higher education institutions located in Ghana. The population for the study was made up of all academic (Teaching staff) and non-academic (Administrative) employees of the University. The researcher identified six (6) places on the University campus that befitted the status of a restaurant (Davis, et. al., 2009). Of the six (6), five (5) were purposively used for the study and the sixth was purposively reserved for the pilot study due to its obscured location on the Campus. The sample for this study was senior members of the University. At the time of data collection, 973 of the University's employees, were Senior Members (The University's HR Senior Members Section, 2019). Per the University's policy, an employee qualifies to be a Senior Member if the individual has attained a minimum of a master's degree or its equivalent in professional terms. Furthermore, the area of training for Senior Members was classified into science or non-sciences. Yamanes's formula was used to calculate the sample size of this study (Sarmah & Hazarika, 2012; Sarmah & Hazarika, 2013). Using the formula, an estimated sample size at a 95% confidence level was 284. However, to make room for non-response, 5% (15) of the respondents were added to the sample size of 284 to sum up to a 299-sample size. Of the anticipated 299 responses to be used for data

analysis, 260 (87%) were deemed viable for analysis after data cleaning.

The study adopted the instrument used by Din et al. (2012a) whose questionnaire contained three (3) sections to address the research questions. Section A comprised four questions about demographic profile. Section B contained fifteen items (15) to assess the general perception of University employees toward providing nutritional information in the restaurant menu. Response ratings were based on a four-type Likert scale ranging from 1 "Strongly Disagree" to 4, 'Strongly Agree". Section C contained eight items (8) to assess the important nutrients to be included in the restaurant menu using a scale ranging from 1 with "No Important at all "and 4 "Very Important". To create a balanced keying for both sections B and C, that is an equal number of positive and negative statements, no neutral response was added to the Likert scale (Bansah et al., 2018). Prior to data collection, approval was sought from the Institutional Review Board (IRB) of the researchers' institution. Also, letters were sent to all restaurants seeking approval for research data collection around the vicinity of the restaurants. With the approval of restaurant managers, research assistants were located at the entrances of the restaurants to seek information as to whether customers were employees of the University and also were Senior Members. If customers' responses were affirmative to these questions, and were willing participants survey instruments were given to them to take into the restaurant for completion. Since it took an average of fifteen (15) minutes to complete the survey, it was expected that participants will complete the survey while waiting for their food order. Completed questionnaires were returned while exiting the restaurant.

Data Analysis

IBM SPSS statistic version 25.0. was used for data analysis. Descriptive statistics were used for analysing answers to research questions 1 and 2. An independent sample t-test was also used to answer research questions 3 and 4. Based on the four-point Likert scale, a mean score of 2.5 or above was considered a positive perception, with scores lower than 2.5 representing negative perceptions of the respondents. As is the convention, an a priori selected p-value < .05 served as the benchmark to identify statistical significance.

RESULTS

Demographic Information

Majority of the respondents were males (n = 164, 36.9%). Table 2 summarizes the rest of the demographic information.

Table 2: Demographic Information of Participant

Characteristic	Frequency	Percentage
Gender		
Female	96	36.9
Male	164	63.1
Area of Training		
Non-science	159	61.2
Sciences	101	38.8
Age		
20 – 25	64	24.6
26 – 30	45	17.3
31 – 35	38	14.6
36 – 40	65	25.0
41 - 45	32	12.8
46 - 50	15	5.8
Above 50	1	0.4

Perceived Utility of Nutritional Information

The overall mean score, (M = 3.04), indicated that University employees had some form of perceived knowledge of nutritional information (Table 3). The majority of the University staff perceived the provision of nutritional information as vital (M = 3.35, 75.7%) and also expected the information to be truthful (M = 3.29, 79.2%)

Table 3: Descriptive Statistics For Restaurant Menu Nutritional Information Items

Item No.	Item	n	M	% in agreement
1	Providing nutritional information in the menu is important for me (e.g., calories consumed, food groups).	260	3.35	75.7
2	I believe nutritional information helps me to determine the nutrition intake when I dine at a restaurant.	260	3.04	63.0
3	I am interested in looking for nutritional information of menu items in a restaurant	260	3.25	66.5
4	I intend to pay attention to nutritional information while choosing a menu item in a restaurant.	260	3.07	63.1
5	I could not care less whether the restaurant has nutritional information or not.	260	2.04	21.6
6	I am quite knowledgeable about nutritional information.	260	3.02	59.6
7	I feel confident about my ability to comprehend nutritional information on the menu.	260	3.26	75.3
8	I am confident in using nutritional information.	260	2.73	51.2
9	I will always be looking for nutritional information of menu items in a restaurant in future.	260	3.36	76.0
10	I would like to see additional nutritional information about menu items in a restaurant in the future.	260	3.33	78.5
11	I would not buy the product without high nutritional information in the future.	260	3.13	64.3
12	Restaurants should accurately tell nutritional information in the menu	260	3.23	80.8
13	I believe nutritional information should not be misleading.	260	3.29	79.2
14	Percentages on nutritional information could be sufficient to provide how much of a given ingredients a food product contain.	260	3.01	64.7
15	I believe it is quite costly for a restauranteur to include nutritional information in the menu.	260	2.56	49.7
	Overall Mean		**3.04**	

Participants also perceived that nutritional information could help to determine their nutritional intake (M = 3.04, 63%) as well as accurately providing nutritional information in the menu by restaurants (M= 3.23. 80.8%).

Subsequent responses to support the assertions above were further strengthened by the University employees agreeing to being interested in looking for nutritional information on menu items in a restaurant (M= 3.25, 66.5%), intention to pay attention to nutritional information while choosing a menu item in a restaurant (M = 3.07, 63.1%), and a feeling of confidence about their ability to comprehend nutritional information on the menu (M = 3.26, 75.3%). As a result, their perceived determination to always look for nutritional information about menu items in a restaurant in future (M= 3.36, 76.0%) and the expectations to see additional nutritional information about menu items in a restaurant in the future (M= 3.33, 78.5%) and, percentages on nutritional information based on given ingredients a food product contains (M = 3.01, 64.7%) were also highlighted.

Nutrition Information deemed important by participants

Information on cholesterol (M = 3.75), calories (M = 3.71), salt (M = 3.62) and dietary fibre (M = 3.42) in descending order were identified as the most important to be included in the restaurant menu (Table 4). Proteins, fat, carbohydrates and sugar all appear to be significant information perceived by the University employees to be on the restaurant menu. The overall mean score (M = 3.33) appear to suggest that, generally, University employees are of the opinion that the provision of the eight listed nutrients on the menu could be informative.

Table 4: Descriptive Statistics For Important Nutrient Items on Restaurant Menu

Item No.	Items	N	Mean	SD
1	Calories	260	3.71	.562
2	Protein	260	3.00	.711
3	Fat	260	3.02	.819
4	Dietary Fiber	260	3.42	.717
5	Carbohydrates	260	3.00	.708
6	Cholesterol	260	3.75	2.603
7	Sodium	260	3.62	.599
8	Sugar	260	3.08	.749
Overall			**3.33**	

Comparison perception based on gender

Of the fifteen (15) items, thirteen (13) showed statistically significant differences between female and male University employees (Table 5). It is worth noting that, item 5 (I could not care less whether the restaurant has nutritional information or not, M = 1.73, p = .000, as compared to M = 2.22) which the female University employees responded in the negative, suggesting that females do care more than males as to whether restaurants have nutritional information on menus or not. This outcome might have contributed to females responding in the affirmative to the other 12 items that showed statistical significance between females and males.

Comparison perception based on area of training

The study found differences in perception by area of training. From Table 5 it is observed that respondents with science background had significantly different perceptions from their counterparts in the non-science fields. Ten (10) of the

fifteen (15) items yielded statistical significance differences between respondents with science and non-science backgrounds (Table 6). Most notable among the items was item 5 (I could not care less whether the restaurant has nutritional information or not, M = 1.84, p = .000, as compared to M = 2.36 for non-science) which suggests that University employees with science backgrounds cared more about having nutritional information on restaurant menu compared to their on-science counterparts.

Table 5: Differences in Restaurant Menu Nutritional Information Items Reported Based on Gender

Item No.	Items	Gender[1]	Mean	SD	t-value	Sig (2-tail)
1	Providing nutritional information in the menu is important for me (e.g., calories consumed, food groups).	F M	3.56 3.23	.662 .916	3.154	.002
2	I believe nutritional information helps me to determine the nutrition intake when I dine at a restaurant.	F M	3.39 2.84	.851 1.096	4.180	.000
3	I am interested in looking for nutritional information of menu items in a restaurant	F M	3.44 3.15	.856 .954	2.464	.014
4	I intend to pay attention to nutritional information while choosing a menu item in a restaurant.	F M	3.25 2.97	.906 .923	2.281	.018
5	I could not care less whether the restaurant has nutritional information or not.	F M	1.74 2.22	.943 .839	- 4.256	.000
6	I am quite knowledgeable about nutritional information.	F M	3.36 2.87	.896 .928	4.648	.000
7	I feel confident about my ability to comprehend nutritional information on the menu.	F M	3.64 3.04	.600 .895	6.739	.000
8	I am confident in using nutritional information.	F M	2.90 2.63	1.044 1.035	2.007	.046
9	I will always be looking for nutritional information of menu items in a restaurant in future.	F M	3.83 3.08	.451 1.057	7.273	.000
10	I would like to see additional nutritional information about menu items in a restaurant in the future.	F M	3.61 3.16	.686 .942	4.088	.000
11	I would not buy the product without high nutritional information in the future.	F M	3.81 2.73	3.180 .887	4.094	.000
12	Restaurants should accurately tell nutritional information in the menu	F M	3.28 3.20	.691 .815	.807	.421
13	I believe nutritional information should not be misleading.	F M	3.45 3.20	.663 .913	2.377	.018
14	Percentages on nutritional information could be sufficient to provide how much of a given ingredients a food product contain.	F M	3.47 2.74	1.005 1.145	5.192	.000
15	I believe it is quite costly for a restauranteur to include nutritional information in the menu.	F M	2.43 2.64	1.203 1.208	- 1.375	.170

[1] = Gender. F = Female. M = Male.

Nevertheless, in terms of the ability to comprehend nutritional information, both groups of respondents shared the same views.

There was no statistical significance between the science and non-science employees as both sects of employees affirmed their confidence about their ability to comprehend nutritional information on the menu (item 7), a reflection of the expectation to always look for nutritional information on menu items in a restaurant in future (item 9), the provision of accurate nutritional information in the menu (item 12),

Table 6: Differences in Restaurant Menu Nutritional Information Items Reported Based on Area of Training

Item No.	Items	AT[1]	Mean	SD	t-value	Sig (2-tail)
1	Providing nutritional information in the menu is important for me (e.g., calories consumed, food groups).	N S	3.26 3.49	.868 .795	-2.06	.040
2	I believe nutritional information helps me to determine the nutrition intake when I dine at a restaurant.	N S	2.75 3.50	1.077 .808	-5.926	.000
3	I am interested in looking for nutritional information of menu items in a restaurant	N S	2.58 3.85	.830 .357	-9.626	.000
4	I intend to pay attention to nutritional information while choosing a menu item in a restaurant.	N S	2.58 3.85	.830 .357	- 14.574	.000
5	I could not care less whether the restaurant has nutritional information or not.	N S	2.36 1.84	1.078 .716	-4.639	.000
6	I am quite knowledgeable about nutritional information.	N S	2.64 3.62	.924 .630	-9.445	.000
7	I feel confident about my ability to comprehend nutritional information on the menu.	N S	3.22 3.33	.862 .826	.740	.460
8	I am confident in using nutritional information.	N S	2.34 3.35	.956 .864	-8.367	.000
9	I will always be looking for nutritional information of menu items in a restaurant in future.	N S	3.31 3.44	.948 .963	.170	.865
10	I would like to see additional nutritional information about menu items in a restaurant in the future.	N S	3.18 3.57	.952 .698	-3.630	.000
11	I would not buy the product without high nutritional information in the future.	N S	2.94 3.43	.880 3.198	-1.799	.073
12	Restaurants should accurately tell nutritional information in the menu	N S	3.20 3.28	.778 .763	-.773	.440
13	I believe nutritional information should not be misleading.	N S	3.25 3.35	.827 .854	-.892	.373
14	Percentages on nutritional information could be sufficient to provide how much of a given ingredients a food product contain.	N S	2.64 3.55	1.235 .666	-7.167	.000
15	I believe it is quite costly for a restauranteur to include nutritional information in the menu.	N S	2.11 3.27	1.096 1.029	-8.472	.000

[1] = Area of training N = Non-science S = Sciences

and expectation that nutritional information should not be misleading (item 13). However, University employees with science backgrounds were of the perception that it is quite costly for a restauranteur to include nutritional information in the menu (item 15, M = 3.27, p = .000) as compared to their non-science counterparts (M = 2.11).

DISCUSSION

This current study sought responses from employees of a public University with the goal of soliciting their perception on the provision of NI on restaurant menus. This study's results were generally consistent with the existing knowledge. Particularly, the finding about the utility of menu information in helping customers make healthier eating choices is similar to earlier findings by (Mhurchu, et. al, 2018; Roberto & Khandpur, 2014). Similarly, the study's finding about respondents' expectations of finding nutrition information blends with findings from earlier studies (Din et al., 2012a; Fakih, et. al., 2016).

Of the fifteen items, only two items (items 5 and 15) had a mean score below 2.60. It was not surprising that participants had negative perceptions on the statement I could not care less whether the restaurant has nutritional information or not about not (Item 5, M = 2.04). This could perhaps be due to the fact that participants were relatively highly educated. The study focused on respondents who were Senior Members. Such persons by default are holders of a minimum of a master's degree. This study's results are generally consistent with the existing knowledge about nutrition knowledge and demographic such as educational level (Bharath & Foster, 2008; Campos, et al., 2011; Walters & Long, 2012). This further suggests that restaurant outlets situated within a higher education need to consider nutritional information on menus as a significant factor while planning menus (Ambardar & Ghai, 2013). This strong support for information to be made available was reinforced by the low mean scoring for item 15 (M=2.56) which suggested that it is quite costly for a restauranteur to include nutritional information in the menu. Stated differently, respondents felt the cost was not a strong enough excuse for nutritional information to be excluded from the menu. This finding reflects Krešić, et. al's (2018) observation in a similar study. This perception is not far-fetched as prices for menu items within the restaurants in this current study area could be between $3-6 depending on a selected meal.

The relationship between perceived knowledge about nutritional information (item 6, M = 3.02) and confidence in using nutritional information (item 8, M = 2.73) was further highlighted with the participants responding in the affirmative. Even though various reasons could be cited for the paucity of data related to nutrition knowledge and food behaviour (Miller, et al., 2013; Quaidoo, et al., 2018; Wardle, et al., 2000), in a study to determine the relationship between knowledge and intake of fat, fruit and vegetables using a well-validated measure of nutrition knowledge, knowledge was significantly associated with healthy eating, and, the effect persisted after controlling for demographic variables (Wardle, et al., 2000). This study concluded by reiterating the importance of nutrition knowledge as a vital component when promoting healthy eating (Wardle et al., 2000). This assertion was further strengthened by Spronk, et al. (2014), and Noronha, et al. (2020) who are of the view that nutrition knowledge is vital and as such, recommends it for health literacy/education.

The preference of respondents on nutritional information on fat or cholesterol is supported by earlier findings (Clifford & Kozil, 2020; Din, et. al. 2012b). The mean score of 3.75 for fat-related information suggests that respondents are generally aware of fat and its deleterious effects on health. Indeed, fat-related information is foundational in

nutrition and is often the first issue to be discussed by clinicians and dieticians with patients (Harvard Medical School, 2020; U.S. National Library of Medicine, 2020). Even though there was a positive perception (M = 3.71) on the importance of calories on a restaurant menu, a reported systematic review and meta-analysis that determined the effect of restaurant menu labelling on calories and nutrients chosen in laboratory and away-from-home settings indicated that menu labelling had no effect on calories, carbohydrates, fat (total and saturated), and sodium ordered and consumed away from home (Cantu-Jungles, et al., 2017). It is furthermore reported that calorie labels do not have the desired effect in reducing total calories ordered (Kiszko, et. al., 2014) even though fat, saturated fat, and trans-fat (Bharath & Foster, 2009) and sodium (Wu & Sturm, 2012) menu information are of concern to consumers.

The finding that females were more concerned with nutritional information (Table 4) resonates with the general literature (Chen, et al., 2015; Din et al., 2012a; Din et al. 2017; Krešić, et al., 2018; Krieger, et. al., 2013). Both genders, however, share the same consent on the need for accuracy (Item 13, Table 5) and the use of cost as an excuse to exclude nutritional information from the menu (Item 15, Table 5) as there was no statistical significance ($p>0.05$) difference with these assertions.

In relationship with the perception based on area of training, the statistical significance difference based on the cost involved for a restauranteur to include nutritional information in the menu (Item 15, Table 6) might be as a result of employees with Science background perceived knowledge of the cost implication of nutrient analysis for restauranteur. Thus, the fundamental underlying this difference in the view of the authors could be the application of procedural knowledge by the non-science participants.

CONCLUSION

The main purpose of this study was to determine University employee's general perception toward nutritional information on the restaurant menu. The findings are consistent with earlier literature. Overall, findings from this study suggested that University employees had high expectations of the provision of nutritional information in the menu of restaurants on campus. Therefore, supporting the popularity of the provision of nutritional information on the menu as customers become conscious of making informed nutritional decisions. While all the nutrients were expected to be showcased on the restaurant menu, University employees placed more importance on calories, cholesterol and sodium which represented common nutrients showcased on food retail products. The outcome of this study further reiterates other studies that have reported females showing more interest in nutritional information than their male counterparts. This further strengthens the argument that females are not only particular about food but also have a keen interest in what goes into family meals. University employees with science backgrounds showed more expectancy for the provision of nutritional information on restaurant menus as compared to their non-science counterparts. With the paucity of data in this regard, this is a significant contribution to nutrition knowledge literature among University employees.

However, from a long-term perspective for these restaurants, one can purchase software that can estimate the caloric and other nutrition content of items for as little as $200 (Center for Science in the Public Interest [CSPI], 2015). Alternatively, restaurants can partner with organizations to assist in providing nutrition information through analysis of menu items (CSPI, 2015). In this case, pricing is dependent on the number of menu items, the

complexity of the menu item, and the status of membership (CSPI, 2015). According to CSPI (2015), costs per menu item analysed could range from $36–$245, an opportunity these restaurants within the University can access at lower rates as the University can boast of two science-related Colleges.

Finally, the outcome of this study suggests that, overall, participants might have employed declarative knowledge in responding to the items. Indicating that declarative knowledge was used through the application of usage situations (types and constituents of food), desired consequences (health benefits of consumption), desired higher-order product attributes (healthy or nutrition nature of the food) and subsequent shopping scripts (seeking product information) to make informed decisions. This reiterates Grunert and Colleagues' (1993) assumption that lifestyle links products to self-relevant consequences and subjective perceptions, based on information and experience and, learned procedures concerning how to obtain, use, or dispose of products.

Implications for the Study Area

This research provides additional insight into the present body of literature on hospitality. The concept of providing nutritional information on restaurant menus within the University setting will be new to the service providers and employees, however, it is more likely to be accepted by them in the future. The effort needed to have them reach this pinnacle requires collaborative endeavours. According to Grunert et al. (1993), even though lifestyles transcend individual brands or products and may be specific to a product class, lifestyles in a way defined, change slowly and will always frame behaviour. However, any single act can always be modified at will by constructing ad hoc chains linking that act to the attainment of value(s). Managing customer needs has become an essential component of service provision over the past decade and as such restaurants within the University must begin to consider sensitizing themselves with nutritional knowledge, to complement their profit-making aim. Currently, all the restaurants within the University campus that employees patronize are solely managed by the Department associated with the restaurant. The University management does not have control of the direct management of these restaurants apart from one. For starters, it is paramount to have the University set up a Hospitality Directorate that can oversee food production and safety activities of the restaurants within the University. Upon the successful establishment of the Directorate, the initial phase of the Directorate's activity would be to embark on educating the management and staff of the restaurants on the importance of healthy eating and its impact on the productivity of the employees within the University. Soliciting resource persons within the University to aid in this endeavour should be at little or no cost to the Directorate. The second phase will entail a more collaborative approach with the Directorate working with Departments (resource persons), such as biochemistry, nutrition and dietetics, vocational and technical education and, hospitality and tourism management to help to determine and provide the nutrition content of a meal served at a restaurant. It behoves on a renowned University like the one studied to seek the well-being of its employees and as such collaboratively work with the researchers. This will go a long way in promoting the well-being of employees through access to healthy meals.

This study was conducted in a specific location cross-sectional design and as such future studies should employ multiple locations on the basis of longitudinal study. Secondly, the sample was drawn from University employees which might have been composed of a disproportionate number of highly educated respondents and as such responses might

have been swayed as a result. An outcome the authors suggest might have resulted in the statistical significance differences that have been recorded between science and non-science University employees for the remaining nine (9) items.

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