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ASSESSING THE KNOWLEDGE AND AWARENESS OF FOOD VENDORS ON THE HEALTH IMPLICATIONS OF FOODS PACKAGED IN PLASTIC BAGS IN THE BEREKUM MUNICIPALITY

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Abstract

Chemicals linked to health concerns have been found to transfer from packaging into food. As a result, food vendors must be aware of the health risks linked with improperly used plastic food packaging. However, little is known about the knowledge and awareness of food vendors when it comes to the use of plastic bags. This study assessed the knowledge and awareness of food vendors on the health implications of foods packaged in plastic bags in the Berekum Municipality. The target group was small-scale food vendors and customers, and the study design was used. The study's sample size was set at 50 people using purposive and convenient sampling approaches. The study used an open-ended narrative, a face-to-face general interview guide technique, and observation to generate replies. The instrument's dependability was determined using the test-retest method.Data was analysed into frequencies distributions and tables. The study revealed that about 80% on the average food vendors are not aware of the health implications of the packaging material or the storage practices on food nutrients and its implications on consumer's health. the study recommends that The District Assembly and the local unions should organise health seminars and screening on healthy life style through proper food packaging strategies that will embrace proper packaging materials that has minimal hazard like leaves and papers.

Keywords: Food vendors, health risks, chemicals, plastics bags, food packaging,

Introduction

Packaging, according to Merriam Webster, is "material used to enclose or contain anything." Food packaging, on the other hand, serves a variety of functions in addition to protecting,

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preserving, containing, marketing, informing, storing, and transporting food (Marsh &Bugusu, 2007). As materials have developed from leaves, shells, and hollowed logs to cloth, ceramic, glass, metal, and plastic, packaging has been investigated for purpose and requirements within the food packaging business. Food packaging is evolving at a breakneck speed (Karmaus, et al., 2018). Physically preserving food and drinks during the production, transport, and storage processes; preventing food from spoiling; and presenting product information are just a few of the benefits of this type of packaging (Karmaus, et al., 2018; Seltenrich& Tart, 2015). Food packaging is a combination of art and science that has come a long way, and commodities are now typically packaged in multiple layers to keep them healthy and wholesome for customers from the time of creation. Food packaging improves consumer health by preventing germ infection. Throughout the delivery chain, food packaging plays an important role in food safety. Food packaging has always been a crucial part of the food production process. Chemical additions in plastics increase the material's consistency for its intended application, but their toxicity is unknown and not thoroughly tested.

Food packaging is essential; without it, contemporary food systems would be unable to function. The enormous geographic spread of today's food chains, as well as global value chains, is defining characteristic (Sundqvist-Andberg et al., 2021). The fundamental goal of food packaging is to protect the product it contains, assuring its safety and organoleptic properties. Flavor, color, and aroma are vitally important to the consumer who will purchase and eat the product. Furthermore, the package protects the product from microbial deterioration, chemical modifications, and physical changes during transportation and storage by acting as a barrier against germs as well as unfavorable changes in temperature, light, and moisture (Landim et al., 2016). The packaging functions that a food package system requires are protection, containment, communication, and convenience (Aggarwalet al., 2020).

Packaging can boost sales in a competitive market in this way, as it can be designed to enhance the image of a product or separate it from competitors (Farmer, 2012). Since the 1950s, packaging has accounted for 40% of all plastics produced, with 41% of it utilised exclusively for food or beverages (Schweitzer et al., 2018). This figure mostly applies to the stage of the food system where food is processed, marketed, and distributed to consumers. Plastics, on the other hand, are widely employed at various phases of the food system, such as in agricultural mulch, fishing nets, and produce delivery boxes. The food system, as a whole, is expected to account for a significantly bigger fraction of the world's dependency on plastics than its share of plastic packaging alone. Intestinal damage and tissue abrasion caused by plastic particles (Revel, et al., 2018), as well as effects of chemicals leached from plastics on endocrine dysfunction, diabetes, and reproductive issues, are examples of specific human health impacts that have been considered in the more general literature on plastics (Thompson et al., 2009). To qualify for our scope evaluation, studies must demonstrate that the plastic, including chemicals leached from it, originated from a specific human use within the food chain, which is not always the case.

The role of plastic food packaging in human health protection has also been studied. In 2010, foodborne illnesses (such as Salmonella) claimed the lives of 420,000 people (World Health

ISSN- 2394-5125 VOL 09, ISSUE 03, 2022

Organization, 2015). Humans are also poisoned by plastic packaging. Chemicals including BPA, BPC, heavy metals, and organic contaminants from plastic packaging contribute to this toxin (Meeker et al., 2009). Endocrine dysfunctions, hormonal abnormalities, and even reproductive difficulties have been linked to this form of poisoning (North &Halden, 2013), as well as cancer, immunotoxicity, obesity, and immunological suppression (Schaider et al., 2017). Long-term exposure and increase of toxic packaging chemicals provide health-related problems (Ong et al., 2020). Endocrine-disrupting chemicals (EDCs) alter biological systems even at low levels, according to studies, putting consumers' future health at risk (Gore et al., 2014; Vilarinho et al., 2019). When asked about food pollutants, however, just a few customers have identified food packaging materials (Gallart-Ayala et al., 2013). In addition, people are still mostly uninformed of food contamination causes other than bacteria (Ong et al., 2020).

Chemical components from packaging have the potential to migrate into meals, but what matters most is the degree to which this migration occurs and the potential health risks to humans. To date, the specialists have gone through a few studies and investigated the potentially dangerous effects of allergies on food packaging for public safety. Chemical pollutants such as Bisphenol-A (BPA), a plastic insecticide, and phthalates, a plastic softener, are dangerous. Chemicals from plastics travel at random and are leached into the food and water they hold. Even in tiny doses, this amount has not been demonstrated to be safe in terms of health. The purpose of the study was to investigate the knowledge and awareness of food vendors on the health implications of foods packaged in plastic bags in the Berekum Municipality.

Methodology

The investigation was conducted using a case study method. A case study, according to Seidu (2006), entails an in-depth assessment of the complicated elements that contributed to the uniqueness of a social unit, a person, a family, or a group of people. Because the problem under study is unique to Be rekum Municipality, the researcher adopted a case study design. The participants in this study were all small-scale food sellers and their customers in the Bono region's Be rekum Municipality. According to Environmental Protection Agency inspectors, the total number of registered members mandated to sell food goods in the municipality is believed to be around 1245.As a result, the population for the study was made up of registered members who worked as roadside food vendors. The sample size was chosen from thirty (30) small-scale food merchants and twenty (20) consumers. Thirty (30) small-scale food sellers were chosen for the study using a purposeful sample technique, whereas twenty (20) consumers were chosen using a convenient sampling procedure. To collect the essential data for the study, the researcher employed an open-ended narrating face-to-face general interview guiding technique and observation.

Before the interview, the tool was discussed with colleagues and later verified by the researchers' supervisor to guarantee its validity. To improve the interview guide, certain suggestions were given. Five small-scale food sellers in DormaaAhenkro were chosen for the instrument's reliability pilot testing. Two weeks later, the same groups were examined again. Cronbach's Alpha (a) was calculated for both parts to determine internal consistency and the

ISSN- 2394-5125 VOL 09, ISSUE 03, 2022

instruments co-efficient.In a field notebook, the interview responses were recorded both electronically and manually. The information was transcribed, edited, and evaluated using themes derived from the study's goal. This centered on identifying significant concepts and concerns expressed in field replies in respect to the research objectives. The food providers were asked for permission to conduct the research. The head of the department provided a letter of introduction. This allowed the researcher to obtain consent for the study's conduct.The researchers also communicated with the district assembly and any other agencies in charge of food packing and storage practices. Participants were assured of their secrecy and anonymity.SPSS software version 22 (IBM Corporation, Chicago, IL, USA) was used for data analysis.

Results and discussion

Demographic information on respondents

Table 1 represents the gender, age, marital status, and religion of respondents in the study, 82% were females while 18% were males. The dominant female representation could be attributed to the involvement of women in trading. Concerning age, thirty-eight percent (38%) were less than 30 years; 50% were within the age range of 30-50 years and 12% were 50 years and above. The ages of respondents were found to be in the working-class age bracket. In terms of the marital status of respondents, forty-four percent (44%) were single; 54% were married while 2% were widows/widowers. The marital status of respondents indicated that most of the respondents were married and is responsible people who can adequately give a responsive and detailed opinion on alternatives food packaging materials other than the use of plastics bags and the possible effect of plastic bags on the environment. Regarding the religion of respondents who partook in the study, twenty-two percent (22%) were Muslims; 72% were Christians whiles 6% were neither Christians nor Muslims.

Table 1 Background characteristics of respondents

Sex	**Frequency**	**Percentages (%)**
Female	41	82
Male	9	18
Total	**50**	**100**
Age	**Frequency**	**Percentages**
Lower than 30 years	**19**	38
30 – 50 years	**25**	50
50 and above	6	12
Total	**50**	**100**
Marital status	**Frequency**	**Percentages**
Single	22	44
Married	27	54

ISSN- 2394-5125 VOL 09, ISSUE 03, 2022

Widow/widower	1	2
Total	**50**	**100**

Religion	**Frequency**	**Percentages**
Muslim	11	22
Christian	36	72
Others	3	6
Total	**50**	**100**

Educational Background of Respondents

The academic qualifications of the responders are shown in Table 2. Out of 50 respondents, 42 percent had no formal education, 28 percent had a Middle School Leaving Certificate, 24 percent had a West African School Certificate, 2 percent had GCE 'O' or 'A' level certificates, 2 percent had 3-year rs cert 'A' Post-Secondary Certificates, and 2 percent had a diploma certificate. However, it is possible to assume that 70 percent of the vendors have a low educational background.

Table 2: Educational Background of Respondents

Academic Qualification of Respondents	**Frequency**	**Percentage (%)**
No formal education	21	42
Middle School	14	28
WASCE	12	24
G.C.E 'O' And 'A' Level	1	2
3-Years Cert 'A' Post Sec	1	2
Diploma	1	2
Total	**50**	**100**

Field work, 2021

Health Implications of plastic waste

Table 3: respondent's views on plastic waste and impact on human health

Statement	**Frequency**	**Percentages%**
Foul odour and unsightliness	50	100
Gastrointestinal parasite (worms)	45	90
Typhoid fever	48	96
Cholera	49	98
Malaria	41	82
Skin irritation	32	64
Eye irritation	29	58
Respiratory tract infection – cough	40	80

ISSN- 2394-5125 VOL 09, ISSUE 03, 2022

Table 3 represents respondents' views on health implications of improper waste disposal and its impact on the human health. With this an open face to face interaction was used to engage the entire respondents to give their opinion. With this each respondent was allowed to give more than one opinion (hence the multiple responses). Categorization was done based on the similaritiesof responses gathered and summarised each of the categories over hundred percent. One hundred percent 100% indicated that poor plastic waste breed foul odour and unsightliness; 90% indicated Gastrointestinal parasite (worms); 96% indicated Typhoid fever; 98% indicated cholera; 82% indicated Malaria; 64% indicated Skin irritation; 58% indicated Eye irritation whilst 80% indicated Respiratory tract infection – cough. It can be concluded based on the result gathered that the entire respondents know the impact of improper plastic waste disposal on human health.It was observed that the most of the gutters in the market centre are chocked and most surprisingly, most of the food vendoring are found along the road where most of these chocked gutters could be found. Again aside from those who wish that their items are packed in plastic bags other respondents buy and sit around and eat as well.

Table 4 Responses on source of information on food packaging materials and health implications from respondents

Statement	Number of respondents	%
From television	21	42
On the radio	11	22
From relatives	48	96
From friends	34	68
Fromotherr traders	49	98
Food and drugs board	10	20
From parent	21	42
School	4	8
Self-taught	41	82
From dietician	2	4
Health official	2	4

Table 4 indicates respondents' views on source of information on food packaging materials and health implications. Again an open face to face interactions were used to engage all the respondents to give their opinion. With this,each respondent was allowed to give more than one opinion (hence the multiple responses). Categorisation was done based on the similarities of responses gathered and summarised. 21(42%)respondents indicatedtelevision; 11(22%)respondents indicated radio; 48(96%) respondents mentioned relatives; 34(68%)respondents indicated friends; 49(98%)respondents statedfromother traders 10(20%) respondents mentioned Food and drugs board 21(42%) respondents from parents; 4(8%)respondents mentioned that they got to know from school, 41 respondents mentioned

ISSN- 2394-5125 VOL 09, ISSUE 03, 2022

were Self-taught; 2(4%) stated dietician; 2 (4%)indicated Health official.The study has revealed that the majority (98%) of the respondents source their information on food packaging materials and health implications from traders.It was observed that most vendors have never attributed any illness to the plastic bags used to pack food items. Most of them believe that it is used everywhere and so it a normal practice.

Packaging material and health implications

Table 5 presents views on packaging material and health implications. Again, an open face to face interaction was used to engage all the respondents to give their opinion. With this each respondent was allowed to give more than one opinion (hence the multiple responses). Categorization was done based on the similarities of responses gathered and summarised. 41(82%)respondents indicated that packaging materials do not have any nutritional impact, 32(70%)respondents mentioned that they have no knowledge of packaging material on consumes health, 32(64%)respondents indicated that they do not consider nutrition and health in the selection of packaging materials; 47(94%)respondents stated that not aware of chemical reactions between packaging materials and food served, 48(96%)respondents mentioned that they do not know chemicals contained in the packing material and implications on health, 36(72%)respondents stated that they do not know packaging implication on food nutrient and the health of consumers, 48(94%)respondents indicated that packaging materials are for convenience sake and note for it health implication.It was observed that most vendors have never attributed any illness to the plastic bags used to pack food items. Most of them believe that it is used everywhere and so it a normal practice.

Table 5: Respondents views on packaging material and health implications

Statement	Number of respondents	%
Packaging materials do not have any nutritional impact	**41**	**82**
Have no knowledge of packaging material on consumes health	**32**	**70**
Do not consider nutrition and health in the selection of packaging materials	**32**	**64**
Not aware of chemical reactions between packaging materials and food served	**47**	**94**
Do not know chemicals contained in the packing material and implications on health	**48**	**96**
Do not know packaging implication on food nutrient and the health of consumers	**36**	**72**
The packaging materials are for convenience sake and not for it health implication	**48**	**96**

Source: field survey, 2020

ISSN- 2394-5125 VOL 09, ISSUE 03, 2022

Discussion

The research found that respondents source of information on food packaging materials was not authoritative or not from any approved nutritional mandated institution which check the risk in food handling practices. Only about 20% could indicate Food and Drugs Board. Most of them indicated friends, parents and friends which could be based on assumption and hear say. Pienaar(2015) researched that Africa has the most favourable land suited to farming of any continent, meaning that with the right packaging and supply chain knowledge, and achieving population forecasts for 2050, African countries should be able to exportacross the globe. He added that the 'open markets' sell practically every possible household goods in small size sachets consisting literally of only one day supply of the product. This is purely driven by cost and affordability.

The responses in table 3 indicate that respondents lack basic nutritional knowledge that comes with food packaging. About 80% on the average of food vendors are not aware of the health implications of the packaging material or the storage practices on food nutrient and its implications on consumer's health. About 90% merely asserted that plastic bags are used for convenience with no recourse to it nutritional benefit or disadvantage. This confirm the studies by Stillwell &Tibbs (1991) that the two most common factors leading to causes of bacterial food borne illness arecross-contamination of ready-to-eat food from other uncooked foods and improper temperature control. Less commonly, acute adverse reactions can also occur if chemical contamination of food occurs, for example from improper package material, or use of non-food grade soaps and disinfectants.

Castle (2002) suggest that the amount of material migrating from food packaging into food may well be 100 times higher than that from pesticides or environmental pollutants. Many of the public perceptions about food safety are skilfully manipulated and exploited by food marketers. Fear of food contamination has led to a widespread preference for what are seen as 'natural' processes as evidenced by the growth of organic agriculture and the increasing preference for bottled water as a beverage of choice. It is seen from the literature that Problems related to plastic bag usage in food packaging often result from the release of non-plastic components. When exposed to high temperatures, some plastics decompose or oxidize, producing low molecular weight substances that can be toxic. Another problem is related to the ingestion of nano, micro, or macro plastics by animals. Thousands of plastic bags are ingested by animals annually. A study of blue petrel chicks on South Africa found that 90% of them had plastic in their stomachs (Bashir, 2013). These facts contribute to a higher perception in society about the adverse effects of plastics in the oceans/seas. In this sense, measures have been adopted to reduce plastic consumption.

Conclusion

The study investigates the knowledge and awareness of food vendors on the health implications of foods packaged in plastic bags in the Berekum Municipality. It was observed that the majority

of the vendors possess some basic knowledge of food packaging materials but lack proper standards as to the chemical composition and the dangers of plastic bags on human health. It was concluded that vendors purpose of material choice was not based on any scientific research or medical analyses to ascertain the impact of the material on the food nutrient or health implications of the material choice which possibly could be linked with respondents' high rate of illiteracy and lack of proper education.

Recommendations

1. Education should be made to sensitise food vendors on the health implication on the use of plastic bags as packaging materials.
2. The District Assembly and the local unions should organise health seminars and screening on healthy life style through proper food packaging strategies that will embrace proper packaging materials that has minimal hazard like leaves and papers.

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