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HEALTH PROBLEMS ASSOCIATED WITH MARKET WOMEN IN CLOSED AND OPEN SPACE MARKET AREAS

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ABSTRACT

Purpose: The study compared some chosen health problems traders who work in open market areas go through, to that of those who trade in enclosed market areas.

Design/Methodology/Approach: A descriptive design was used by the researchers to arrive at good results. Data used for this study were collected by personal interviews with 400 market traders who traded in all sorts of items out of which 200 were from enclosed market areas, and the other 200 were from open market areas. The data were taken from two main market places, Abura and Kotokoraba, all in Cape Coast, Ghana. The data were analysed using the chi-square test for independence, paired sample t-test, and a test concerning two proportions to draw a vivid inference on the health status of the traders.

Findings: Results from the analysis revealed that in general the three most pronounced health problems that are confronting most of the traders are body pains, followed by headaches and stress. However, all categories of traders (that is, traders who sell in open market areas, and those who sell in enclosed market areas) are equally exposed to health hazards. The results revealed that a trader's experience of any health problem depends on his or her place of trading. Whether he or she sells in an open market area or an enclosed area, each market area type has some particular health effect on the trader. Traders who do their businesses in enclosed market areas experience headaches and stress more often than their counterparts in open market areas. On the other hand, traders who are in open market areas experience body pains, joint pains, sleepless nights and nausea more often than those who trade in enclosed market areas.

Research Limitation/Implication: Symptoms of some diseases other than those caused by exposure to the hazards in the market places, may be responsible for the health problems faced by the traders. However, this is expected to have little influence on the results, since it is a comparative analysis and these symptoms may be present in both categories of traders.

Practical Implication: Public health education on the consequences of exposing oneself to any health hazards in the course of going about with his or her business should continually be given to market women.

Originality/value: The study adds knowledge to Public Health problems in the world and serves as the basis for more advanced work on human exposure to environmental hazards.

Keywords: *Ergonomics; headache; market area; nausea; stress.*

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INTRODUCTION

Improving the health of women is a major worldwide health issue. This is because women's health is intimately tied to several biological and societal factors, and this presents challenging health issues for females (Skolnik, 2016). Health hazards have a devastating impact on the individual, family, society and the nation as a whole. Though there is a high risk associated with working in the informal sector as a result of an unconducive environment, workers in these sectors are neglected and not protected by various institutions mandated to work to Occupational Health and Safety (OHS) (Lund & Marriott, 2005). However, Occupational Health institution has the oversight responsibility to protect workers' informal work environments and do not have the responsibility of protecting workers in the informal sector such as market women.

This however violates the sustainable development goal 3 (SDG 3) which promotes good health and well-being for all people. In leaving no one behind as adopted by Ghana in signing onto the 17 sustainable development goals (SDGs) it is, therefore, necessary for occupational Health Institutions to extend their mandate on protecting workers in the informal sector especially relating to the health of the market women in attaining SDG goal 3. Nuwayhid, (2004), Lund & Marriott, (2005) stipulate that the main challenge of these OHS is that they adopt models that are practised by highly industrialized countries which gives them a narrow focus. As a result, the majority of the people for work in the informal sector in developing countries like Ghana are left behind in the execution of the mandates of these OHS.

In attaining sustainable development goal 8, decent work must be provided for all. However, the inability of the formal economy and government to create enough jobs to meet the demand of the growing population in Ghana, many especially women are forced into the informal sector to work in various markets in the country to meet the demands of life such food, clothing and shelter at the expense of their health considering the environment where they ply their trade and the harsh environmental conditions they are subjected to (Abraham, Ohemeng & Ohemeng, 2017). According to the International Labour Organisation (ILO, 2016), about 60-80% of women work in the informal sector globally. The World Health Organisation, 2018b, also opines that occupational health entails all occupational health and safety, heavy the prime focus on primary hazard prevention. However, problems associated with occupational health as a result of frequent exposure to the worker to hazards that can lead to diseases and cause death in the working environment are infrequently detected. (WHO, 2018a).

Though the majority of women in the country run the various markets, they have no political influence however their collective effort is what propels Ghana's consumer economy according to a study conducted (O'Neill, 2016). Their collective efforts also bring government to power, however, their health and for that matter, their working environment is the least attention is given to as a nation. Furthermore, Idyorough & Ishor (2014) also discovered that market women suffered from several health problems as a result of long hours of moving around with their commodities and exposure to poor sanitation conditions in their various markets. Furthermore, the unclean working environment of these market women was the source of their health problems was the findings of (Idyorough & Ishor, 2014; Olurinola, Fadayomi, Amoo, & Ola-David, 2014) in their study. Olurinola et al. (2014), revealed in a study on market women in Nigeria that 25% of the traders suffered an injury, while 49.1% are harassed by public people in authority who are to protect these market women and provide a safe working environment

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for them. In a recent study carried out by Wrigley-Asante (2013), apart from general bodily pains, swollen feet were the most commonly cited health problems of women who work in the informal sector. According to Boadu, 2013, muscular-skeletal difficulties are some of the health-related problems suffered by market women due to long periods of standing in carrying out their trading activities in the market. Asumeng et al. (2015), stipulates that by the nature of the work and environment of the market women, they are exposed to different kinds of work hazards which include stench from the uncollected waste within the market environment, and harsh weather conditions such as high temperatures leading to headache.

Laura (2010), in a study on market women in Ghana, also revealed that the women are exposed to several market fire outbreaks and diseases related to poor environmental sanitation in the markets. The cause of fire outbreaks in the market results from cooking within the market environment, and overnight fish smoking by market women who are engaged in fish selling. Disease-related to poor environmental health and sanitation is known to come from clogged gutters due to inadequate provision of refuse removal points within the market and lack of cleaning personnel and equipment. Poor water, sanitation and hygiene conditions in the market environment are major drivers of some of the diseases of the market women.

The market area in the Takoradi metropolis for example has only three people employed by the Takoradi Metropolitan Assembly (TMA) to clean the whole market area. Again, Avotri & Walters (1999), revealed that a significant number of street traders (open market traders) as a result of thinking too much or worrying too much suffer from psycho-social health problems which were described by the study participants. In the line of work, these market women also lift and carry heavy loads which also end up affecting their health. Another major driver that contributes to the health of the Ghanaian market woman is financial insecurity leading to a sleepless nights. Another study by Hill et al., (2007) about the health of the market woman in Accra revealed "pain" as the prevalent hazard among street traders (opened market area traders) reporting at the various outpatients' departments (OPD) of various health care centres. Several bodily pains attributed to the load that they (traders) carry throughout their trading activities are reported by the market women. The study seeks to investigate some health conditions of market women in the Kotokuraba and Abura markets in the Cape Coast metropolis of the central region of Ghana. This was done by looking at the effect of open and enclosed places as their trading centres and their effect on the health of the women. Health hazards and their effects on traders cannot be realistically defined and do not negate the need for traders to be informed of the hazards and be protected from them. This work will bring to light some of the environmental and sanitation issues to promote good public health among market women in the Abura and Kotokuraba markets in the Cape Coast Metropolis. It will also inform the market women on how to apply themselves to the environmental condition to help in their well-being in achieving the sustainable development goal (SDG 3). Though there are other works conducted on the work conditions of market traders and some health challenges they face, no attention was given to the occupational health challenges of maternal market traders. The study is to fill that gap by specifically focusing on the two major markets in the Cape Coast Metropolis in the central region of Ghana. Hence, this study is aimed at examining the health hazards associated with traders in the open and enclosed market areas, and its preventive measures if possible. The study will also help policymakers, the Cape Coast Metropolitan Assembly (CCMA) in promoting good sanitation in these major markets in the metropolis. The

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study is also to make recommendations to the government and other stakeholders who may have hand in enhancing the traders' health condition.

Concomitant variables such as symptoms of some diseases other than those caused by exposure to the hazards in the market places may be responsible for the health problems faced by the traders. However, the size of the sample was made large enough to reduce the effect of such variables. Another limiting factor is how long the trader has been selling in those areas. This was captured in the information, and only those who have been selling in their respective areas for three years or more were considered for the analysis. In this case, the environmental influence on their health will not be doubtful. Results may also be influenced by the type of items the trader sells. For example, a trader who cooks to sell might have developed his or her health problem from the heat of the fire he or she uses. In this case, the research avoided these groups of traders.

RESEARCH METHODS

Women traders from the two major markets in the Cape Coast Metropolis of the Central Region of Ghana were the target population. The Kotokoraba and Abura markets in the Metropolis were therefore purposively selected as the study areas. However, the two hundred women from each of these markets are randomly sampled. A sample of four hundred (400) traders of all kinds of commodities were interviewed from the two marketplaces. Two hundred (200) traders who sell in enclosed spaces, and then two hundred (200) from opened spaces were interviewed. The Abura and Kotokoraba markets were selected because they are the main markets centres where most of the traders from the various parts of the metropolis do their trading activities, and for this reason, information from them would greatly represent all the traders in Cape Coast Metropolis.

To have good and reliable information from the traders, a personal interview was used to collect primary data from traders from the two markets under consideration. The data obtained were analyzed by using Excel and MINITAB 15. Tables and graphs were used during the preliminary analysis as also, a Chi-square test for independence, paired sample t-test, and a test concerning two proportions, as further tests, to draw a vivid inference on the health status of the traders.

FINDINGS AND DISCUSSION

This section comprises two subsections: the preliminary analysis, where tables and multiple bar graphs were employed to summarise and make comparisons in the data. The other subsection is the Further Tests, which made use of the paired t-test and Chi-square as statistical tools to help draw inferences on the population.

Preliminary Analysis

Two separate groups of people were the target, traders who sell in open areas, who are always exposed to environmental health hazards such as the heat from the sun, dust, odour, noise and traders who sell in enclosed areas who appear to be relatively more secured from these environmental health hazards. Table 1 shows the numbers of traders interviewed from the two areas (close and open) and the distribution according to the kinds of health problems they face.

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Table 1: Distribution of Market Women in Closed and Opened Market Areas by Health Problems

Health Problem	Closed Area	% of Sellers in Closed	Opened Area	% of Sellers in Opened	Total Number	% Total
Headache	60	30	32	16.0	92	23
Body Pain	66	33	85	42.5	152	38
Joint Pain	24	12	38	19.0	62	15.5
Stress	44	22	28	14.0	72	18
Sleepless Night	0	0	5	2.5	5	1.25
Nausea	0	0	9	4.5	9	2.25
Others	4	2	2	1.0	6	1.5
No Symptoms	2	1	1	0.5	3	0.75
Total	200	100	200	100	400	100

Source: Field Survey.

Out of the four hundred traders sampled (with 50% from enclosed and 50% from open market areas), 152, representing 38% suffer body pains, 92, representing 23% also suffer Headaches, whereas only 5 traders representing 1.25% experience sleepless night. Very few 3, representing 0.75% said they don't have any of the common health problems in the questionnaire. This means that the greatest number of the traders usually experience body pains and of these, 85, representing 42.5% of the Open Market traders are involved, whereas 66 of those in enclosed areas are involved. This gives the impression that traders in unprotected areas are exposed to health hazards that gives them general body pains more than their counterparts in enclosed areas. The next health problem experienced by the market women is a headache. Sixty of the ninety-two traders who experience headaches as a result of the nature of their work sell in enclosed areas. This represents 30% of traders who sell in enclosed areas, whereas 32 of them representing 16% of traders in open areas suffer from headaches. One may expect it to be the other way because of their exposure to the sun, but poor ventilations experienced by traders in closed areas might have contributed to their headaches. It may not be surprising that none of the traders of the closed area experience sleepless nights and nausea, but 5 represent 2.5% of the open areas and 9 represent 4.5% of closed areas traders suffer from sleepless nights and nausea respectively. These defences are clearly shown by the percentage multiple bar chart in Figure 1, and the differences are suspected to be due to the environmental difference.

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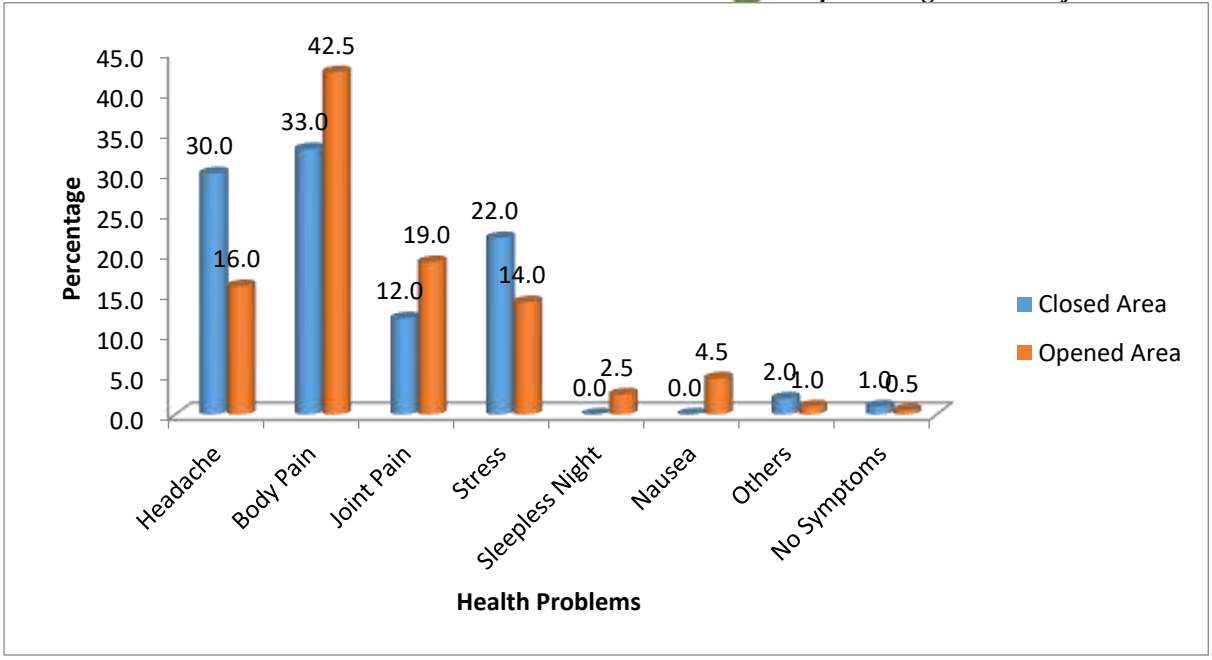

From Figure 1, it is seen that most of the traders (both categories) complain of body pains more than other health problems. This is followed by headaches whereas a very small number experience sleepless nights. However, it is very difficult to determine which category of traders generally complains of these symptoms more than the other. For instance, if you consider headaches, people who sell in enclosed areas more often complain than those who sell in open areas. However, the reverse is true when we come to body pains. Therefore there is no consistency in complaints about the two categories of traders. The Chi-square test of independence in the next subsection will however clarify this.

Further Analysis

Many hypothesis tests were done to help draw inferences from the data and the results are discussed below. Table 2 is made up of the actual numbers of traders who often complain of various health problems. This table is used for significant tests for independence, paired t-test for means, and tests for proportions of the closed market and opened market traders who complain of various health problems.

Table 2: Distribution of Market Women in Close and Open Market Areas by Health Problems

Health Problem	Closed Area	Opened Area	Total Number
Headache	60	32	92
Body Pain	66	85	152
Joint Pain	24	38	62
Stress	44	28	72
Sleepless Night	0	5	5
Nausea	0	9	9
Others	4	2	6
No Symptoms	2	1	3
Total	200	200	400

Source: Field Work

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Chi-square test for Independence

Here, we try to find the answer to research question one, that is, "Do the health problems faced by the traders depend on market areas (that is, whether they sell in a 'closed space' or an 'opened space' market area)?" Using MINITAB 15 for the Chi-square test for independence, the p-value was 0.000 which is less than 0.05. Therefore, we conclude at a 0.05 level of significance that a trader's health problem depends on the market area of selling. This is confirming the categorical differences seen in the percentage multiple bar chart in Figure 1. From the above analysis, it is advisable for traders in all kinds of categories to look for an appropriate environment that will ensure good health support. The only question we have still left unanswered is "whether the categorical differences we see are all significant for their respective health problems. For example, are sellers in enclosed market areas significantly complaining of stress more than their counterparts in the open market areas? This may also be answered by the test for proportions below.

Paired Sample t-Test

This is to enable us to answer research question two, "which group of traders (in closed areas or open areas) complains of general health problems more often than the other? Putting the question this way for the significant test: Do the traders in the opened market areas more often experience health problems than their counterparts in enclosed market areas? From the MINITAB output of Table 2, the p-value was 0.08, which is greater than 0.05. This, therefore, implies that there is no significant difference between the rates of complaints of health problems in the two categories. This may look surprising but it must be understood that we have put the various health problems, headache, body pain, joint pain, stress, nausea and others together and have called it general health problems. However, each of these two environments (closed and open areas) may have some of these as its associated problems. For example, it may be admitted that due to the crowd and poor ventilation, traders who sit at one point in enclosed market areas may easily develop headaches, whereas those in open spaces may easily develop joint pain or sleepless night probably due to the sunny and dusty environments.

Test for Differences in Proportions

The first six health problems were analysed independently to see if the differences noticed in Table 1 are significant.

Headache

From Table 2, 60 of the 200 traders in closed market areas suffer from headaches, whereas 32 of the 200 who sell in open market areas do the same. To find out whether the difference between these numbers is significant or not, a z-test for the difference in proportion was done using MINITAB 15. The p-value for the test was 0.003. This is less than 0.05, it can be concluded at a 0.05 significant level, that the difference between the two categories of traders is significant, and hence traders who sell in enclosed areas more frequently experience headaches than those who do their businesses in open market areas. The finding is in an agreement with Skolnik, (2016). As suspected already, factors such as poor ventilation in the enclosed market areas may be responsible for such phenomenon.

Body Pain

From Table 1, the proportion of traders who sell in enclosed market areas who often complain of body pains is 0.33, whereas the proportion of those selling in the open market area is 0.425.

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Carrying out the significance test to see if the revelation by the multiple bar chart (Figure 1) is true at a 0.05 significance level, that is if traders who sell in open market areas complain of body pains more often than their counterparts in enclosed market areas, the p-value for the test of difference of the two proportions was obtained to be 0.025. This is less than 0.05, we conclude that the two proportions are significantly different and therefore traders who sell in the open market areas more often complain of body pains than those who sell in enclosed market areas. Again, many factors may be responsible for body pains experienced by this class of traders. Comparatively, most of the traders in the open areas seem to work more vigorously and this may contribute to their body pains. Again they are always at the "mercy of the weather". The findings confirmed confirms that of Idyorough & Ishor, (2014) who argued that the environmental condition also contributed to the stress of the traders. When it rains, there is less protection for them, and so as in sunny periods. Other factors worth investigating may also be responsible for their body pains.

Joint Pain

From Table 1, the proportion of traders who sell in enclosed market areas who often complain of joint pains is 0.12, whereas the proportion of those selling in the open market area is 0.19. A similar analysis by MINITAB 15 reveals a p-value of 0.027. The p-value is less than 0.05, we conclude at a 0.05 significant level that the proportion of traders in open market areas who complained of joint pains is significantly greater than that of traders who sell in enclosed market areas. Thus, traders who do their marketing in opened and unprotected areas more often experience joint pains than their counterparts in enclosed market areas. Reasons are suspected to be not different from those given in the case of body pains. These health problems look similar to each other as confirmed by Boadu, (2013) that identified muscular-skeletal health problems among traders.

Stress

From Table 1, the proportion of traders who sell in enclosed market areas who often experience stress is 0.22, whereas the proportion of that selling in open market areas is who similarly experience stress is 0.14. MINITAB output gave a p-value of 0.019. Since this figure is less than 0.05, we conclude at a 0.05 significant level that the proportion of traders in enclosed market areas who complained of stress is significantly greater than that of traders who sell in open market areas. The findings corroborated that of Abraham, Ohemeng & Ohemeng, (2017) who revealed that causes of stress at workplaces are displayed, and sitting in one place for a long time may be an issue as well resulting to.

Sleepless Night

The proportion of traders who sell in the enclosed market area, who often complain of sleepless nights is 0, whereas the proportion of that selling in the opened market area is 0.025. A similar analysis by MINITAB 15 reveals a p-value of 0.012. Since this figure is less than 0.05, we conclude at a 0.05 significant level that the proportion of traders in open market areas who complained of sleepless nights is significantly greater than that of traders who sell in enclosed market areas. Thus, traders who do their marketing in opened and unprotected areas more often experience sleepless nights than their counterparts in enclosed market areas. Reasons are suspected to be not different from those given in the case of body pains and joint pains, as these problems can also lead to restlessness.

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Nausea

The proportion of traders who sell in the enclosed market area, who often complain of nausea is 0, whereas the corresponding proportion of that selling in the opened market area is 0.045. A test for hypothesis reveals a p-value of 0.001. This is less than 0.05, we conclude at a 0.05 significant level that the proportion of traders in open market areas who complained of nausea is significantly greater than that of traders who sell in enclosed market areas. Thus, traders who do their marketing in opened and unprotected areas more often experience nausea than their counterparts in enclosed market areas. This may be attributed to the dusty environments some of them find themselves in.

CONCLUSION

The assessment on this topic concerning headaches, body pains, joint pains, stress, sleepless night, and nausea revealed that in general the three most pronounced health problems that are confronted by most traders are body pains, followed by headaches and then stress. In general, the findings from the study cannot specifically point out which category of traders (that is, traders who sell in opened market areas and those who sell in enclosed market areas) are more exposed to health hazards than the others. However, comparing the two categories of traders to these selected health problems, we conclude from the analysis that a trader's experience of any health problem depends on where she does her trading. That is, whether she sells in an opened market area or an enclosed area, and each market area type has some particular health effect on the trader. Practically, there is an occupational health hazard associated with the environment traders in the two markets occupy to do their daily sales. Specifically, we move further to conclude that traders who do their businesses in enclosed market areas more often experience headaches and stress than their counterparts in open market areas. On the other hand, traders who are in open market areas more often experience body pains, joint pains, sleepless nights and nausea than those who trade in enclosed market areas.

Recommendations

We complete our study by trying to come out with the following recommendations:

i. Health experts must come out with the actual causes of the differences in health problems experienced by the traders in the areas of trade, and recommend remedies for them;
ii. For the increasing population in Ghana, old fashioned market places must be replaced by ultramodern structures that would better address the health needs of traders in terms of ventilation, exposure to the weather, and so on;
iii. Public health education on the consequences of exposing oneself to any health hazards in the course of going about with her business;
iv. Interested researchers may consider the specific tasks involved in these traders' daily activities (such as lifting heavy loads, sitting in one place for a long time and so on) and the effect they may have on their health.
v. Interested researchers may also consider these health problems for male traders as men and women may have differences in immune systems.
vi. Responsible agencies for ensuring environmental sanitation in markets should always carry out their duties to provide a safe and clean environment for the market women.
vii. Departments for the evacuation of waste generated in the markets must do that as early as possible to prevent the health risk of the market women.

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