Factors associated with healthcare utilization among commercial drivers in juaboso district and wiawso municipality of Ghana: A cross sectional analysis.

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Abstract

Background: Research evidence suggests prevalence of multiple poor health conditions among commercial drivers in low and middle-income countries including Ghana. As such, utilization of healthcare among this group is expected to rise with the increasing poor health conditions. Despite this, not much studies have been done on the correlates of healthcare utilization among commercial drivers in Ghana. The purpose of this study was to estimate the prevalence and associated factors of healthcare utilization among commercial taxi drivers in Ghana.

Methods: A cross-sectional data through questionnaire was gathered from 210 commercial taxi drivers registered with the Ghana Private Transport Union in Juaboso District and Wiawso Municipality of Ghana. Percentages and frequencies were used to describe background characteristics of respondents. Chi-square test and t-test were used to check degree of influence of explanatory variables prior to inclusion in regression analysis. Multiple logistic regression analysis was used to assess factors that predict healthcare use among the study participants.

Results: About 26% of drivers reported utilizing healthcare in the past 12 months. Results show that married taxi drivers (AOR=24.757, C.I: 5.176-118.416), older taxi drivers (AOR=1.050, C.I: 1.006-1.095), taxi drivers who do not engage in physical activity (AOR=3.340, C.I: 1.186-9.406), were significantly more likely to utilize healthcare compared to their respective counterpart. However, uninsured taxi drivers (AOR=0.136, C.I: 0.046-0.406), taxi drivers without past illness (AOR=0.106, C.I: 0.035-0.322), and taxi drivers who have no disability (AOR=0.186, C.I: 0.060-0.579) were significantly less likely to use healthcare compared to their respective counterparts.

Conclusion: This study suggests the need for the inclusion of multiple significant demographic, socio-economic, health status and lifestyle factors in the formulation of health policy aimed at promoting and improving healthcare utilization among commercial drivers in Ghana.

Background

Driving is an inherently high-risk job invoking negative health outcomes for drivers. Long working hours, loud noise, inadequate cabin ergonomics, violence from passengers, and traffic congestion, are risk factors inherent to the driving occupation that may expose drivers to suffer multiple physical, psychological and behavioral ill health [1]. For instance, the sedentary behavior and the strain of duration of driving have been found to be associated with hypertension among bus drivers [2].

Subsequently, several other studies have reported that multiple negative medical conditions including sleep disorders, diabetes, hypertension and obesity are highly prevalent among commercial drivers [3]. Also a high prevalence of workplace stress associated with obesity and high blood pressure has been observed among bus drivers [1]. A large proportion of drivers consider that sometimes they were not in good health conditions to drive and fatigue, alcohol, negative emotions, drowsiness, headaches, respiratory disease, and fever are the most prevalent health conditions among drivers [4].

Taxi drivers, like any other category of drivers are equally exposed to risk factors associated with driving occupation that invoke poor health conditions that can affect their performance and relationship with passengers. This is crucial because the taxi industry is an important component of the transportation sector. In Ghana 89.4% of Ghanaian residents make up to 5 trips on shared taxi over seven days period [5]. Unfortunately, about 55% prevalence of dysglycemia have been found among taxi drivers in Indonesia [6] while 16% and 17% of pre-diabetes and diabetes have been reported among taxi drivers in buffalo city metropolitan municipality in South Africa [7]. In Ghana, 23% and about 53% prevalence of hypertension and pre-hypertension have been found among taxi drivers [8]. In addition about 39% and 19% prevalence of unrecognized hypertension and obesity respectively, have been reported among drivers in Ghana. These medical conditions were associated with ageing, smoking, alcoholic beverage intake, sleep inhibitor drug use, high calorie intake, long-duration sitting, eating late and under stressful conditions [9].

The prevalence of poor medical conditions among drivers therefore provides adequate rationale for health assessment among commercial drivers. Medical examination among drivers therefore is a major individual and public safety priority [3]. Moreover, about 90% of drivers think that it is necessary for drivers to receive regular health examination [10]. This

is important because increased healthcare use by drivers will trigger lifestyle modifications that will reduce disease onset and offer clues for better disease predictive, preventive and personalized medicine [9].

In view of the foregoing, it is natural to expect that formal healthcare utilization will increase among drivers if better diagnosis and treatment of medical conditions of drivers is to be achieved. However, in South Africa, an average of 1.26 healthcare visit per person have been recorded among drivers [11] while relatively low 30% of truck drivers in the United States made regular healthcare visit [12]. In spite of the growing literature on the poor health conditions and the low levels of healthcare utilization among drivers, there is information paucity on healthcare use and its predictors among drivers. This study therefore recruited taxi drivers in the Juaboso District and Wiawso Municipality in the Western-North region of Ghana with the immediate objective of estimating the proximate factors of healthcare utilization among, specifically, taxi drivers.

Majority of studies on healthcare utilization factors have been carried out among groups (e.g. aged) [13] since their circumstances directly imply poor health condition and increased health care utilization is expected. Investigating associated factors of healthcare utilization among drivers extends studies on groups whose circumstances have inherent implications for vulnerability to poor health where increased healthcare utilization is expected. Findings from this study can be used to design policies to influence healthcare utilization among drivers whose occupational circumstances inherently make them vulnerable to poor health conditions.

Methods

Study area

Two GPRTU lorry stations in Juaboso District and Wiawso Municipality were included in this study. The Juaboso District and Wiawso Municipality are both located in the Western-North Region of Ghana. The District and Municipality are contiguous to each other with Wiawso Municipality sharing border with Juaboso on its West. The focus of the study on GPRTU drivers was due to the fact that GPRTU represents the dominant transport union mostly patronized in Ghana [14]. Also, GPRTU is the only predominant union in the two study areas that provide minibus and taxi services as well as intra and inter-district transport services. The GPRTU station in the Juaboso district is located in Juaboso, the capital of the Juaboso district while the other is located in Asawinso, the second largest commercial town in the Wiawso Municipality. As the District capital, Juaboso is the hub of all economic activities in the district. As a result most commercial drivers in the district are registered with the GPRTU station in Juaboso. Sefwi Wiawso is also the regional and largest commercial capital in the newly created western-north region in Ghana.

Sample and data

Data were obtained from a survey conducted at the two GPRTU stations included in this study between 4th and 20th November, 2020. Commercial licensed taxi drivers who have been recognized and registered with the GPRTU stations were the target population. The total number of taxi drivers registered with the Juaboso and Asawinso station is 235 and 275 respectively and thus a total of 508 taxi driver population was targeted in this study. Sample of 210 licensed commercial taxi drivers was used based on a sample size calculation with a 5% margin of error. Taxi drivers at each station were selected into the sample based on simple random sampling after a list of all drivers at each station was compiled. In total, 97 and 113 drivers were selected from Asawinso and Juaboso station respectively, in a proportional-to-size-samples allocation method.

Data were collected through an interviewer-administered questionnaire from the study participants. The questionnaire was developed in English but it was read in Twi for easy understanding by the respondents, and also because most of them were illiterate who could not read or write. The questionnaire were administered by the authors and all the respondents were interviewed at the station.

The questionnaire collected information on predisposing factors (social structure, demographic and health beliefs), enabling factors (income, health insurance enrolment, access to healthcare facilities and transportation) and needs factors (perceived health status and health evaluation), which either facilitate or hinder utilisation of healthcare. These are social and behavioural constructs that are postulated to influence healthcare utilization in developing countries [15]. The specific demographic data collection included marital status, age, ethnicity, and religious affiliation. Also health related and behavioural/lifestyle characteristics (physical activity, alcohol consumption, smoking, health status, illness, Non-communicable Disease, disability) were collected. Given that previous findings [6-9,16,17] demonstrate association of these factors with health status among the study population, this study considered it important to explicate their role in healthcare utilization among taxi drivers.

Ethical Consideration

Participation in the study was completely voluntary and if participants did not wish to participate they would have the option of declining to answer or leaving the interview. The survey was anonymous and the data were presented in an aggregated manner, hence, the participants' privacy and confidentiality were firmly protected. These arrangements were also read to the participants and informed consents were received from all the participants before participating and answering the questions. In addition permission was sought from the station master of each of the station before interviewing the drivers.

Measures

Outcome variable

In this study, the outcome variable was healthcare utilisation which was defined as seeking medical treatment from a health professional at a hospital, clinic and other health centres [13]. Healthcare utilization was measured as a dichotomous variable showing 'no utilisation' or 'utilisation' of healthcare over the past 12 months before the study.

Predictor variables

Predictor variables such as gender (male, female), marital status (single, married), ethnicity (Non- Akan, Akan), enrollment in

the National Health Insurance Scheme (NHIS) (Yes, No), family support (Yes, No), past illness records (Yes, No), disability status (Yes, No), chronic Non-Communicable Diseases (NCDs), (Yes, No), self-related health (Good health status, Poor health status), engagement in physical activity (Yes, No), consumption of alcohol (Yes, No), consumption of tobacco (Yes, No), fruits intake (5 or more serving fruits per day, less than 5 serving fruits per day) and vegetables intake (5 or more serving vegetables per day, less than 5 serving vegetables per day) were measured as dichotomous variables. Age (years), income and years of driving were measured as continuous variables while religious group (Christianity, Islam, African Traditional Religion) was measured as nominal variable. Education (no formal education, basic school education, high school education) was measured as nominal variable.

Data analysis

Data were entered and coded and analyzed statistically using Statistical Package for the Social Sciences (SPSS) software (Version 20.0). Percentages and frequencies were used to describe the background characteristics of the study sample. The binary logistic regression model was used to predict healthcare use among the study participants. Prior to using the regression model, the degree of influence of explanatory variables was first checked using the Chi-square test and t-test. Then, variables that showed significant responses in the Chi-square and t-tests were used further in the regression model. The test results were considered significant at 0.05 or less. Pearson's Chi-square (χ^2), Hosmer and Lemeshow's test of goodness-of-fit and classification tables of the sample cases were used to evaluate the fitness of the collected data to the logistic regression model.

Results

Basic socio-demographic characteristics of study participants

All the drivers were male. Drivers' average age was 32.31 (±11.31; (18-64 years)). The average years of driving experience was 10.5 (± 8.98; (1-45)). Average monthly income was GH₵1,576.25 ± 658.15. The majority (52.4%) of the drivers were married, and majority (69%) had basic education

of completion to Junior High School level. In addition, majority of the study's participant belonged to the Akan group (88%), were Christians (95.2%) and 92.9% learned driving through apprenticeship (Table 1).

Prevalence of healthcare utilization and associated factors

In terms of healthcare utilization, the majority (73.8%) of the drivers did not use health care services in the past 12 months (Table 2). Regarding health behavior, majority of the drivers (54.8%) consumed alcohol but on the reverse, majority (97.6%) did not smoke tobacco in the last 1 year. Also majority of drivers did not exercise (59.5%). Around 59.5% of the drivers do not receive family support while 52.4% had insurance scheme. About 67% perceived good health while 85.7% reported having no chronic non-communicable disease (Table 2).

Analysis of association between healthcare utilization and predictor variables

Tables 3 and 4 show the that there was significant difference between healthcare users and non-users in respect of years of driving, age, marital status, religion, NHIS, education, disability, exercise, illness, family support, and health status. Income, ethnicity, chronic non-communicable disease, fruit and vegetable intake, alcohol and tobacco consumption did not show significant difference between healthcare users and non-users, and so these variables were excluded from further analysis in the logistic regression. Years of driving experience was excluded from the regression analysis due to correlation issues with age of drivers.

Factors associated with healthcare utilization among taxi drivers

Table 5 shows the results of the binary logistic regression on the predictors of healthcare utilisation among taxi drivers. The results show that married drivers are more likely (AOR=24.757, C.I: 5.176-118.416) to use formal healthcare than their counterparts who are not married. In terms of age, the results further show that increase in age of drivers is significantly associated with an increase in healthcare utilisation meaning that older drivers are more likely (AOR=1.050, C.I: 1.006-

Table 1. Socio-demographic and driving characteristics of taxi drivers.

Variable	Category	n (%)
Ethnic Group	Akan	185 (88.1)
	Non-Akan	25 (11.9)
Religion	Christianity	200 (95.2)
	Islam	10 (4.8)
Marital Status	Single	100 (47.6)
	Married	110 (52.4)
Education	Noformal education	10 (4.8)
	Basic	145 (69)
	Secondary	45 (21.4)
	Tertiary	10 (4.8)
Driving License	B	150 (71.4)
	C	40 (19)
	Other	20 (9.6)
Mode of driving license	Apprenticeship	195 (92.9)
	Driving school	15 (7.1)

Table 2. *Healthcare utilization and associated factors among sample taxi drivers.*

Variable	Category	n (%)
Use of healthcare in the last 12 months before the study	Yes	55 (26.2)
	No	155 (73.8)
Health insurance	Yes	110 (52.4)
	No	100 (47.6)
Family support	Yes	85 (40.5)
	No	125 (59.5)
Past illness	Yes	95 (45.2)
	No	115 (54.8)
Current health status	Good health	140 (66.7)
	Poor Health	70 (33.3)
Chronic Non-communicable diseases	Yes	30 (14.3)
	No	180 (85.7)
Disability Status	Yes	20 (9.5)
	No	190 (90.5)
Engagement in physical activity	Yes	85 (40.5)
	No	125 (59.5)
Consumption of alcohol	Yes	115 (54.8)
	No	95 (45.2)
Consumption of tobacco	Yes	5 (2.4)
	No	205 (97.6)
Fruits intake	Less than 5 servings of fruits per day	135 (64.3)
	More than 5 servings per day	75 (35.7)
Vegetable intake	Less than 5 servings of fruits per day	155 (73.8)
	More than 5 servings per day	55 (26.2)

Table 3. *Association between healthcare utilization and categorical variables among taxi drivers (only significant differences are reported).*

Independent variable	Categories	Healthcare utilisation		X^2
		Yes (%)	No (%)	Value
		n=55	n=155	
Health insurance	Yes	63.6	48.4	3.785[b]
	No	36.4	51.6	
Family support	Yes	54.5	35.5	6.122[b]
	No	45.5	64.5	
Past illness	Yes	72.7	35.5	22.730[b]
	No	27.3	64.5	
Current health status	Good health	45.5	74.2	15.088[b]
	Poor Health	54.5	25.8	
Disability Status	Yes	27.3	3.2	27.243[b]
	No	72.7	96.8	
Engagement in physical activity	Yes	27.3	45.2	5.392[a]
	No	72.7	54.8	
Religion	Christianity	100	6.5	3.726[a]
	Islam	0	93.5	
Marital Status	Single	36.4	58.1	7.664[b]
	Married	63.6	41.9	
Education	No formal education	9.1	3.2	11.307[b]
	Basic	72.7	67.7	
	Secondary	9.1	25.8	
	Tertiary	9.1	3.2	
Note [a, b] Significant at <0.05 and 0.01 levels respectively.				

1.095), to utilize formal healthcare than younger drivers. Moreover, drivers with perceived poor health were more likely to use healthcare compared to their counterparts with perceived good health status. Moreover, drivers who do not engage in physical activities or exercises are significantly more likely (AOR=3.340, C.I: 1.186-9.406) to use formal healthcare compared their counterparts who engage in physical exercise.

However, from Table 5, uninsured taxi drivers are significantly less likely (AOR=0.136, C.I: 0.046-0.406) to use healthcare compared to taxi drivers who are on insurance scheme. Drivers without family support are also less likely (AOR=0.036, C.I: 0.008-0.150) to use formal healthcare compared to their counterparts with family support (Table 5). Drivers without past illness for the past 3 months prior to the research (AOR=0.106,

Table 4. *Association between healthcare utilisation and continuous socioeconomic variables among drivers (only significant differences are reported).*

| Variable | Healthcare Utilisation | | | | t-test |
| | Yes | | No | | |
	Mean	SD	Mean	SD	
Age	39.82	12.783	29.65	9.389	38.797*
Years of driving	14.55	8.664	9.06	8.671	16.226*
*Note: * indicates significance at 0.01 levels*					

Table 5. *Factors associated with healthcare utilization among taxi drivers.*

| Variables | AOR | 95% C.I | | Significance |
		Lower	Upper	
Demographic				
Marital status				
Married	24.757	5.176	118.416	0
Age	1.05	1.006	1.095	0.025
Socioeconomic				
Educational status				
No formal education	0.336	0.071	1.586	0.168
Basic education	0.193	0.008	4.652	0.311
Secondary	13.112	0.106	1624.721	0.295
Noninsured	0.136	0.046	0.406	0
No Family support	0.036	0.008	0.15	0
Health related				
No past illness	0.106	0.035	0.322	0
oor health status	10.556	3.184	35	0
No disability	0.186	0.06	0.579	0.004
Health behavior				
No physical activity	3.34	1.186	9.406	0.022
Model fitting information				
Model-χ^2 (significance)	172.213 (0.000)			
- 2 log likelihood ratio	118.909			
Nagelkerke R^2	0.746			
Hosmer-Lemeshow χ2 (significance)	314.151 (0.000)			
p < 0.05 [a]single is the reference category for marital status variable. [b]primary education is the reference category for education variable.				

C.I: 0.035-0.322), and drivers who have no disability (AOR=0.186, C.I: 0.060-0.579), were also significantly less likely to use healthcare compared to their counterparts who reported illness during the past 3 months and those who have disability, respectively.

Discussion

This study examined predictors of healthcare use among taxi drivers in the Juaboso and Wiawso District and Municipality respectively. A low utilisation of 26.2% (compared to non-utilisation of 73.8%) was found among taxi drivers in this study. This low healthcare utilisation is similar to Apostolopoulosa et al., 2013 who found 30% regular healthcare visits among truck drivers in the United States [12]. It is also similar to Lalla-edward, who recorded an average of 1.26 healthcare visit per truck driver in South Africa [11].

This study also found that older drivers are more likely to use healthcare compared to younger drivers. This finding is consistent with Lalla-edward et al., who found that older truck drivers (≥40 years) were more likely to access TB and PHC services in South Africa [11]. The increase in healthcare use associated with increase in age might be due to the high risk

of diseases that come with aging. Setorglo et al., 2019 found that hypertension and pre-hypertension was more prevalent and associated with taxi drivers aged 20 years and above in Ghana [8] while Lakshman et al., also found that drivers age 35 years and above are associated with hypertension [17]. Compared with younger taxi drivers (18-39), older taxi drivers (40-59) are more likely to test positive for blood pressure >140 systolic and/or >90 diastolic as well as more likely to have high random glucose (200 mg/dl) [18]. Taxi drivers aged 35 years and above have been found to be 4 times more likely to develop diabetes than younger age taxi drivers [6,7].

Majority (63.6%) of the taxi drivers in this study were married which is similar to the findings reported by other authors [7,17,18] even though the percentage of married participants is lesser than that found in Gyan, and Lakshman, [17,18] but higher than that found in Adedokun[7]. Again results in this study showed that married taxi drivers are more likely to utilise healthcare compared to their counterparts who are not married. This findings corroborates findings in Lalla-edward et al., who also found that drivers with stable partners were more likely to access malaria and PHC services even though the same group were less likely to access STI and TB services [11]. Married

taxi drivers have been found to have higher prevalence of diabetes compared to never-married participants [7] while being married has been found to be associated with hypertension [17]. Moreover, percentage of married taxi drivers with high BP, and high glucose is higher than their counterparts who are singled, windowed or divorced [18]. This is suggestive of why married taxi drivers are found utilising healthcare more compared to their counterparts.

Results showed that drivers who do not exercise are more likely to utilise healthcare compared to those who exercise. A majority of 59.5% of respondents in this study reported no engagement in physical exercise. This incidence rate however, is lower than Yang et al., Odame and Mohsen & Hakim, who reported 85%, 75.1% and 93.6% of no regular exercise respectively [9,10,19]. The lack of physical activity might be due to the long hours of work or driving among drivers. Majority of drivers have been found working for averagely long hours per day while sleeping for few hours in a day which is indicative of the fact that driving taxi is a full time job [8,10,20]. Meanwhile, Setorglo et al., found that hypertension was associated with duration of driving [8]. Meanwhile lack of exercise have been shown to have direct consequences on the health of drivers. Studies have shown that lack of physical activity is associated with hypertension among drivers [9]. Also prevalence of diabetes among physically inactive participants is double the prevalence found among active taxi drivers [7]. This might explain the higher use of healthcare among taxi drivers who reported no engagement in physical activities in this study.

Drivers without family support were found more likely, in this study, to utilise healthcare than those with family support. In this sense, it could be infered that drivers who do not receive family support may suffer more job stress and develop stress-related poor health conditions which might influence them to utilise healthcare more. This is consistent with Useche, who found that taxi drivers who have significantly high social support experienced lower accidents rates compared to city bus and interurban bus drivers [20]. Couto & Lawoko have found that burnout after experiencing workplace violence is more common among drivers without either supervisor, co-worker, or person outside the workplace social support compared to those who receive any of these social support [21]. Meanwhile burnout has been found to have significant health consequences on workers in the form of anxiety, depression and sleep disturbances [22]. This might explain why drivers without family support are more likely to utilise heathcare more

Fifty-two percent (52.4%) of taxi drivers in this study had health insurance which is higher than the percentage (46%) of taxi drivers who had health insurance found in Gany, [18]. In this study we found that uninsured taxi drivers were found less likely to use healthcare compared to those on health insurance. Uninsured taxi drivers are found to be more likely to be unaware of their heath status [18]. Being unware of their health status, uninsured taxi drivers might utilise healthcare in order to know more about their health status compared to their counterparts who might know their health status through previous utilisation of such health insurance to use healthcare.

Findings from this study have implications for policy, practice and research which need to be commented on. In the first

place, this study suggests the need for the inclusion of multiple significant demographic, socio-economic, health status and lifestyle factors in the formulation of health policy aimed at improving healthcare utilisation among commercial drivers in Ghana. Also, since this study reported a lower utilisation rate of healthcare utilisation among commercial drivers in Ghana, there is the need for health stakeholders to frequently sensitize commercial drivers concerning their healthcare utilisation. From the research perspective, this study provides the baseline data for the conduct of a nationally representative survey regarding healthcare utilisation among commercial taxi drivers in Ghana. Nevertheless, the present study has some limitations. Factors associated with healthcare utilization, such as exercise, marital status, age etc. were measured by self-reporting which might be subjected to response bias. Furthermore, the current study included only a sample of taxi drivers that is not representative of all types of drivers such as bus and minibus drivers. Therefore, larger study that include other drivers like bus and mini-bus drivers is recommended. Moreover, as in any other study, due to the cross-sectional nature of the present study, this study is limited to associations and no conclusive causal interpretation can be made. Further studies can investigate the causality and underlying mechanisms of the associations observed in this study. Healthcare utilization was defined as in this study as seeking medical treatment from a health professional at a hospital, clinic and other health centres. Futures studies should endeavor to broaden the scope of the definition of healthcare utilisation to cater for both formal and informal healthcare.

Conclusion

This study was designed to examine socioeconomic, health related and behavioural factors associated with care utilization among commercial drivers in Ghana. In this study, it came to light that healthcare utilization is low among the study's participants. Healthcare utilization, however, was found to be significantly associated with drivers' age, marital and health insurance status, engagement in physical exercise and family support. The Ghana Ministry of Transport and GPRTU should engage more with the Ghana Health Service to organise awareness creation among drivers to promote increased healthcare utilization. Meanwhile healthcare providers and policy makers working on healthcare utilization among drivers should target more specifically, socioeconomic, behavioural and health related factors associated with healthcare utilization as indicated by the findings in this study.

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