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Demographic determinants of patronage of medicine hawkers by commercial vehicle passengers in Ghana

Joy Ato Nyarko[1], Kofi Osei Akuoko[2], Jonathan Mensah Dapaah[2], Nana Yaa Serwaa Akuoko[3], Egwolo Perpetual Iyengunmwena[4]
[1]Department of General and Liberal Studies, School of Basic and Biomedical Sciences, University of Health and Allied Sciences, Ho, Ghana
[2]Department of Sociology and Social Work, Faculty of Social Sciences, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
[3]Faculty of Health and Life Sciences, Coventry University, Coventry, United Kingdom
[4]Department of Accounting and Finance, Faculty of Business, University of Northampton, Northampton, United Kingdom

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ABSTRACT

Medicine hawking is one of the major public health problems of the global south. This present study examined the demographic determinants of patronage of the services of medicine hawkers among commercial vehicle passengers in Kumasi, Ghana. A cross-sectional study was carried out from February 2022 to March 2022 at major bus terminals in Kumasi. Data were descriptively and inferentially analysed. The survey revealed that 55% of the respondents had bought medicines from medicine hawkers before. There was a significant relationship between having bought from a medicine hawker before and the intention to buy from them again in the future. Also, age, religion and education contributed significantly to patronising the services of medicine hawkers. We recommend that government intensifies its public health education on the implications of seeking health care services from these medicine hawkers.

Corresponding Author:

Joy Ato Nyarko
Department of General and Liberal Studies, School of Basic and Biomedical Sciences
University of Health and Allied Sciences
Ho, Ghana
Email: janyarko@uhas.edu.gh

1. INTRODUCTION

Health care service utilisation has been considered very important to the health and general wellbeing of populations [1], [2]. Despite its importance, research shows that health care service utilisation is not the same across populations and is influenced by age, sex, education, cost of access to health services, health insurance coverage and household size among others [3]–[6]. In Sub-Saharan Africa, the high cost of and lack of access to licensed health care facilities have been outlined as barriers to formal health care service utilisation [7]–[10]. These challenges have resulted in the springing up of other sources of informal health care services providers to bridge this access gap [11], [12]. Among these informal health care services providers are the itinerant health care service providers, who, in most cases, are unlicensed to operate but do so illegally [13]. These hawk medicines have become a common sight at bus terminals, inside buses, long traffic jams, and within communities in the global south [14].

There are agencies in place in every nation to regulate the sale and use of medicines [15]. In Africa alone, the World Health Organization (WHO) reports an estimate 54 such agencies of government regulating medicines manufacture, sale, and use. The report, however, indicates that most of these agencies are

incapable of delivering their mandates effectively due to resource constraints [16]. For example, in Ghana, the Ghana Pharmacy Council allows two main outlets for medicines recognised within the state's laws–pharmacies and licensed chemical sellers [17], [18], but medicine hawkers are common at bus terminals in the cities [19]. Bus terminals in Ghana are concentration points where different informal economic activities take place including medicine hawking [20]. Nyarko *et al*. [19] contend that within the bus terminals are the passengers, who are the primary clients of the medicine hawkers.

Studies have shown that medicine hawking is an issue of public health concern and is patronized for various reasons [21]–[25]. Cultural reasons and the personal qualities of the sellers, such as being approachable and courteous, appeal to the potential clients to buy from them [21]. Also, these sellers offer medicines in the immediate proximity of the potential clients at an affordable price that the potential customers (usually passengers at bus terminals) can afford [22], [26]. Amin *et al*. [27] have argued that, medicine hawkers are more affordable than private sector providers and are sometimes even more affordable than publicly administered free clinics when transport and informal payments are considered. Other studies have also shown that the services of medicine hawkers are patronized largely by the poor in society [28]. Macro health system factors such as distance to health facilities and disrespectful formal health care workers have also been adjudged as contributing to people's patronage of medicine hawkers [24], [29]. Sudhinaraset *et al*. [30] also contend that there are three principal reasons for using these informal medicine vendors–convenience, affordability, and social and cultural effects.

Fights against these medicine hawkers have consistently failed as the public still use their services [31]. In Ghana, efforts by Ghana Pharmacy Council and the Traditional Medicines Practice Council to clamp down on the activities of medicine hawkers have proven futile since these medicine hawkers always find their way back to the terminals to do their business [19]. Research on hawking in Ghana has generally concentrated on street food vendors and their clients as well as their illegal use of public space [32]–[34]. Though research [22], [35] have examined the Ghanaian consumers' perception of medicine hawking and medicine hawkers at bus terminals in Ghana, there is dearth of literature on the demographic determinants of the patronage of medicines by the public from these hawkers. Therefore, this study sought to contribute to the existing discourse by examining commercial vehicle passengers' demographic characteristics and patronage of the services of medicine hawkers in Kumasi, Ghana.

2. METHOD

This study used a cross-sectional study design, and data was obtained from a convenience survey of 400 commercial vehicle passengers. This paper forms part of a larger study which took place from June 2021 to November 2022. The study examined medicine hawkers and their patrons in Kumasi, Ghana. Kumasi is the second largest city in Ghana with major bus terminals, and located in the region having more than half of the active labour force of the informal sector in Ghana [36]. The questionnaire for this paper consisted of close-ended questions relating to some demographic characteristics of the passengers and was administered from February 2022 to March 2022. Ethical clearance for the study was obtained from the Humanities and Social Sciences Research Ethics Committee, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana (HuSSREC/AP/1/VOL.1), and the Institute of Health Research, University of Health and Allied Sciences, Ho, Ghana (UHAS-REC A.2[6]21-22).

The independent variables in this study were the demographic characteristics of the respondents and consisted of sex (male and female), age group (18 to 28 years, 29 to 39 years, 40 to 50 years and more than 50 years), marital status (married, single, divorced, widowed and separated), religion (Christianity, Islam and African Traditional Religion), educational level (no formal education, basic education, secondary education and tertiary education), occupational sector (civil servant, formal private sector, informal private sector, self-employed and unemployed), health insurance subscription (yes and no), type of insurance (Ghana National Health Insurance Scheme and private insurance) and where medicine hawker was first encountered (bus terminal, within the community and inside a bus). The dependent variable was "ever purchased from a medicine hawker?" with a dichotomous outcome of yes and no.

Data were coded and analysed using the statistical package for social sciences (SPSS version 20). Descriptive and inferential statistics were used in the data analysis. Frequencies and percentages were used to depict the demographic characteristics, and Chi-square test of independence was also used to examine the association between having ever purchased from medicine hawkers and purchasing from them again in the future. Effect size of the Chi-square test was also computed with Cramer's V to estimate the strength and magnitude of the observed effect. The binary logistic regression was modelled to predict patronage of medicine hawkers, with the demographic characteristics as predictor variables. A p-value of less than 0.05 was considered statistically significant.

3. RESULTS AND DISCUSSION

3.1. Results

From Table 1, a total of 400 passengers responded to the survey. Of the 400 respondents, 52% were males. Regarding age group, 190 were from 18 to 28 years old. Only 9.5% were more than 50 years of age. Most (47.3%) were single, followed by the married representing 40.5%. Christians were in the majority accounting for as much as 87% of the total survey respondents. More than 80% had attained some form of formal education. Among those who had some form of formal education, 38% had attained tertiary education. Those self-employed were 33.5% and the unemployed were 27.0%. Most (84.5%) of the respondents had subscribed to some form of health insurance scheme. Of the 84.5% who had subscribed to health insurance scheme, 334 were subscribed to the Ghana National Health Insurance Scheme (GNHIS). The survey showed that all the passengers had encountered medicine hawkers before, with 61.5% indicating that their first encounter with a medicine hawker was inside a bus.

Table 1. Socio-demographic characteristics of respondents

Variable	Categories	Frequency	Percent
Sex	Male	208	52.0
	Female	192	48.0
	Total	400	100.0
Age group	18 to 28 years	190	47.5
	29 to 39 years	102	25.5
	40 to 50 years	70	17.5
	More than 50 years	38	9.5
	Total	400	100.0
Marital status	Married	162	40.5
	Single	189	47.3
	Divorced	17	4.3
	Widowed	12	3.0
	Separated	20	5.0
	Total	400	100.0
Religion	Christianity	348	87.0
	Islam	42	10.5
	African Traditional Religion	10	2.5
	Total	400	100.0
Level of education	No formal education	48	12.0
	Basic education	98	24.5
	Secondary education	102	25.5
	Tertiary education	152	38.0
	Total	400	100.0
Occupational sector	Civil servant	56	14.0
	Formal private sector	40	10.0
	Informal private sector	62	15.5
	Self-employed	134	33.5
	Unemployed	108	27.0
	Total	400	100.0
Health insurance subscription	Yes	338	84.5
	No	62	15.5
	Total	400	100.0
Type of insurance subscription	GNHIS*	334	83.5
	Private insurance	4	1.0
	Not applicable	62	15.5
	Total	400	100.0
Where medicine hawker was first encountered	Loading bay	64	16.0
	Within the community	90	22.5
	Inside a bus	246	61.5
	Total	400	100.0

Note: *GNHIS= Ghana national health insurance scheme

A cross-tabulation of having ever purchased from a medicine hawker and the likelihood of purchasing again from a medicine hawker is shown in Table 2 with row percentages. From the table, it can be observed that 220 of the 400 respondents had purchased from a medicine hawker before (55.0%, 95% CI 50.0%–60.1%). Of this number, 33.6% indicated that they would buy again from a medicine hawker in the future whilst 20.9% indicated that they would not buy again from a medicine hawker. Also, of the 180 survey respondents who had never purchased from a medicine hawker before, 13.3% indicated that they would likely purchase from them in the future. Chi-square test of association revealed a significant association between having ever purchased from medicine hawkers and the intention to purchase from them in the future with moderate effect size based on Cramer's V, (χ^2 (2) =51.972, $p<0.05$); Cramer's V=0.36.

Binary logistic regression was modelled as shown in Table 3 to predict patronage of the services of medicine hawkers by the respondents. This model was run with the socio-demographic variables against

having ever purchased medicine from a medicine hawker. The outcome variable (ever purchased medicine from a medicine hawker) was dichotomised into 0=No and 1=Yes. The model had χ^2 (18) =123.355, p<0.05; Nagelkerke's R^2=0.355 and accurately predicted 71% of the cases. Age, religion and level of education contributed significantly to the model.

Survey respondents aged 40 to 50 years were 85% less likely to purchase from a medicine hawker than those aged 18 to 28 years. This was significant at 0.05 alpha level (β=-1.907, p<0.05 and a*OR*=0.149). Again, those over 50 years were also 96.8% significantly less likely to purchase from a medicine hawker compared to the younger age group of 18 to 28 years old (β=-3.437, p<0.05 and a*OR*=0.032). Moslems were 3.8 times more likely than Christians to buy from a medicine hawker (β=1.346, p<0.05 and a*OR*=3.842). Regarding education, those who had attained tertiary education were more likely to buy from a medicine hawker than those without formal education (β=1.173, p<0.05 and a*OR*=3.230).

Table 2. Crosstabulation of having ever purchased from medicine hawkers and purchasing from them again in the future

Crosstabulasi	Likely to buy from medicine hawkers again				Chi-square	
	Yes (%)	No (%)	Cannot tell (%)	Total	(χ^2)	Cramer's V
Ever purchased from medicine hawker Yes (%)	74 (33.6)	46 (20.9)	100 (45.5)	220 (100)		
No (%)	24 (13.3)	98 (54.4)	58 (32.2)	180 (100)	51.97*	0.36
Total	98 (24.5)	144 (36.0)	158 (39.5)	400 (100)		

Note: *=significant at α<0.05

Table 3. Socio-demographic determinants of purchasing from medicine hawkers

Sociodemographic variable	Categories	β	Wald	aOR
Sex	Male (Ref)			
	Female	0.189	0.482	1.208
Age group	18 to 28 years (Ref)			
	29 to 39 years	-0.646	3.264	0.524
	40 to 50 years	-1.907	15.794	0.149*
	More than 50 years	-3.437	15.758	0.032*
Marital status	Married (Ref)			
	Single	0.383	0.954	1.466
	Divorced	0.242	.133	1.274
	Widowed	0.425	0.179	1.529
	Separated	-0.020	0.001	0.980
Religion	Christianity (Ref)			
	Islam	1.346	8.955	3.843*
	African Traditional Religion	-20.390	0.000	0.000
Level of education	No formal education (Ref)			
	Basic education	0.983	3.612	2.673
	Secondary education	0.442	0.732	1.555
	Tertiary education	1.173	4.203	3.230*
Occupational sector	Civil servant(Ref)			
	Formal private sector	-0.542	1.314	0.582
	Informal private sector	-0.393	0.597	0.675
	Self-employed	0.745	2.689	2.107
	Unemployed	0.610	2.286	1.840
Health insurance	Yes (Ref)			
	No	0.621	2.733	1.861
Type of insurance	GNHIS(Ref)			
	Private health insurance	1.374	1.529	3.950
Where medicine hawker was first encountered	Loading bay(Ref)			
	Within the community	0.513	1.499	1.671
	Inside a bus	0.318	0.722	1.375
	Constant	-1.438	3.567	0.237

Note: *p<0.05, aOR=Adjusted odds ratio

3.2. Discussion

More than half of the surveyed respondents had previously purchased medicine from medicine hawkers. This result is in consonance with that of Azila-gbettor *et al.* [22], who found that more than 70% of their 983 respondents had ever purchased from a medicine hawker before. Results from the survey of the passengers showed a significant Chi-square test of association between having ever purchased from medicine hawkers before and the likelihood of purchasing from them again (χ^2 (2)=51.972, p<.05). This outcome could be because the medicines were cheap, readily available and efficacious upon first usage. As asserted by Apetoh *et al.* [37], affordability and availability of sellers irrespective of the time of the day, and the ability to purchase 'prescription-only drugs' without prescription are some of the reasons why these informal sellers of medicines are patronised by the public. These sellers are ubiquitous at bus terminals in large sub-Saharan African cities serving their clients with both pharmaceutical and traditional medicines [19]. Their availability,

therefore, affords former customers the chance to buy from them again. Research shows that medicine hawkers have regular customers who buy from them and even recommend the products to other people [23].

Regarding the socio-demographic determinants of patronising the services of medicine hawkers, the results showed that respondents who were more than 39 years old were less likely to patronise the products of medicine hawkers. This means that as age increases, there is a reduced likelihood of patronising medicines from these hawkers. This finding corroborates that of a study in Ghana on the hawking of medicinal drugs, which found that the public's patronage of medicine hawkers decreased with age for all categories of drugs [22]. As age increases, people take on less risk and would not want to risk patronising the services of medicine hawkers for fear of negative implications as communicated by the media [38], [39]. For example, Rolison *et al*. [40] found that ethical and health risk-taking reduce relatively with an increase in age. An increase in age is also correlated with the patronage of formal health care services, which means less patronage of the services of the informal hawkers of medicine [41].

Moslems in the survey were more likely to patronise the services of the medicine hawkers. Swantz [42] reports on Muslim medicine hawkers among the Bantu ethnic group of the central coast of Tanzania. This shows that medicine hawking may not be out of place among Muslims, so they are likely to patronise medicine hawkers' services, as found in this study and others [43], [44]. Igudia [45] has argued that it is common practice in Nigeria for family members and religious associates to buy products from a vendor-member to show loyalty and maintain kinship, rather than to buy from outsiders. This is done to show support for the kin or associate.

Though studies have shown that services of hawkers are mainly patronised by the less educated in the society [9], [22], [28], results from the binary logistic regression in this study showed otherwise. In this study, those who had tertiary education were three times more likely to patronise the services of the medicine hawkers. One can opine that it is out of convenience or the marketing skills of the sellers which enticed clients to buy from them. Nyarko *et al*. [19] avers that medicine hawkers who operate within urban bus terminals employ direct customer engagement as a means to market their medicines and convince clients to patronise their medicines. It has been found in Nigeria that the single and highly educated patronise the services of hawkers because they perceive these vendors as poor/disadvantaged, but that hawking helps them to escape poverty [45]. Also, the affordability of these hawkers' services and products is a factor that their clients, in general, cannot ignore [43].

4. CONCLUSION

The current study revealed that Ghanaians do patronise the services of medicine hawkers despite media advise against their patronage and operating outside government policies and regulations. The study concludes that age, religion and level of education determines the public's patronage of the services of medicine hawkers in urban Ghana. Also, a person's previous patronage of medicines from the hawkers significantly predicts patronising from the hawkers again. Based on these findings, it is recommended that government intensifies public education on the implications of buying medicines from medicine hawkers who operate outside state regulations.

REFERENCES

[1] L. A. Zampetakis and C. Melas, "The health belief model predicts vaccination intentions against COVID-19: A survey experiment approach," *Applied Psychology: Health and Well-Being*, vol. 13, no. 2, pp. 469–484, May 2021, doi: 10.1111/aphw.12262.

[2] L. A. Chaves, D. M. De Souza Serio Dos Santos, M. Rodrigues Campos, and V. L. Luiza, "Use of health outcome and health service utilization indicators as an outcome of access to medicines in Brazil: Perspectives from a literature review," *Public Health Reviews*, vol. 40, no. 1, p. 5, Dec. 2019, doi: 10.1186/s40985-019-0115-1.

[3] F. Lotfi, S. Nouraei Motlagh, G. Mahdavi, K. Keshavarz, M. Hadian, and H. Abolghasem Gorji, "Factors affecting the utilization of outpatient health services and importance of health insurance," *Shiraz E Medical Journal*, vol. 18, no. 8, pp. 1–8, Jul. 2017, doi: 10.5812/semj.57570.

[4] M. Z. Hasan *et al*., "Factors affecting the healthcare utilization from Shasthyo Suroksha Karmasuchi scheme among the below-poverty-line population in one subdistrict in Bangladesh: a cross sectional study," *BMC Health Services Research*, vol. 22, no. 1, p. 885, Dec. 2022, doi: 10.1186/s12913-022-08254-1.

[5] W. Agyemang-Duah, C. Peprah, and P. Peprah, "Factors influencing the use of public and private health care facilities among poor older people in rural Ghana," *Journal of Public Health (Germany)*, vol. 28, no. 1, pp. 53–63, Feb. 2020, doi: 10.1007/s10389-018-01010-y.

[6] P. Bastani, M. Mohammadpour, M. Samadbeik, M. Bastani, G. Rossi-Fedele, and M. Balasubramanian, "Factors influencing access and utilization of health services among older people during the COVID−19 pandemic: a scoping review," *Archives of Public Health*, vol. 79, no. 1, pp. 1–11, 2021, doi: 10.1186/s13690-021-00719-9.

[7] C. Goodman, W. Brieger, A. Unwin, A. Mills, S. Meek, and G. Greer, "Medicine sellers and malaria treatment in sub-Saharan Africa: What do they do and how can their practice be improved?," *American Journal of Tropical Medicine and Hygiene*, vol. 77, no. SUPPL. 6, pp. 203–218, 2007, doi: 10.4269/ajtmh.2007.77.203.

[8] E. Liow, R. Kassam, and R. Sekiwunga, "How unlicensed drug vendors in rural Uganda perceive their role in the management of childhood malaria," *Acta Tropica*, vol. 164, pp. 455–462, Dec. 2016, doi: 10.1016/j.actatropica.2016.10.012.

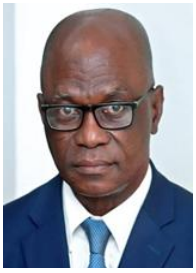
[9] E. Liow, R. Kassam, and R. Sekiwunga, "Understanding unlicensed drug vendor practices related to childhood malaria in one rural district of Uganda: An exploratory study," *Journal of Tropical Medicine*, vol. 2018, pp. 1–11, 2018, doi: 10.1155/2018/6987435.

[10] E. Liow, R. Kassam, and R. Sekiwunga, "Investigating unlicensed retail drug vendors' preparedness and knowledge about malaria: An exploratory study in rural Uganda," *Acta Tropica*, vol. 174, pp. 9–18, Oct. 2017, doi: 10.1016/j.actatropica.2017.06.008.
[11] N. Beyeler, J. Liu, and M. Sieverding, "A systematic review of the role of proprietary and patent medicine vendors in healthcare provision in Nigeria," *PLoS ONE*, vol. 10, no. 1, pp. 1–21, Jan. 2015, doi: 10.1371/journal.pone.0117165.
[12] M. Sieverding and N. Beyeler, "Integrating informal providers into a people-centered health systems approach: qualitative evidence from local health systems in rural Nigeria," *BMC Health Services Research*, vol. 16, no. 1, pp. 1–12, Dec. 2016, doi: 10.1186/s12913-016-1780-0.
[13] J. Das, A. Chowdhury, R. Hussam, and A. V. Banerjee, "The impact of training informal health care providers in India: A randomized controlled trial," *Science*, vol. 354, no. 6308, pp. 1–34, Oct. 2016, doi: 10.1126/science.aaf7384.
[14] F. A. Baidoo, "'Illegal peddling of drugs poses health risk' - Graphic Online," Health. Accessed: Feb. 04, 2020. [Online]. Available: https://www.graphic.com.gh/news/health/illegal-peddling-of-drugs-poses-health-risk.html.
[15] B. Peñaloza, T. Pantoja, C. A. Herrera, R. Torres-Robles, and C. Cid, "Pharmaceutical policies: effects of sales and dispensing policies," *Cochrane Database of Systematic Reviews*, vol. 2015, no. 8, Aug. 2015, doi: 10.1002/14651858.CD011830.
[16] M. Ndomondo-Sigonda, J. Miot, S. Naidoo, A. Dodoo, and E. Kaale, "Medicines regulation in Africa: current state and opportunities," *Pharmaceutical Medicine*, vol. 31, no. 6, pp. 383–397, Dec. 2017, doi: 10.1007/s40290-017-0210-x.
[17] H. Hamill, K. Hampshire, S. Mariwah, D. Amoako-Sakyi, A. Kyei, and M. Castelli, "Managing uncertainty in medicine quality in Ghana: The cognitive and affective basis of trust in a high-risk, low-regulation context," *Social Science and Medicine*, vol. 234, pp. 1–8, Aug. 2019, doi: 10.1016/j.socscimed.2019.112369.
[18] S. Afari-Asiedu *et al.*, "To sell or not to sell; The differences between regulatory and community demands regarding access to antibiotics in rural Ghana," *Journal of Pharmaceutical Policy and Practice*, vol. 11, no. 1, p. 30, Dec. 2018, doi: 10.1186/s40545-018-0158-6.
[19] J. A. Nyarko, K. O. Akuoko, J. M. Dapaah, and M. Gyapong, "Exploring the operations of itinerant medicine sellers within urban bus terminals in Kumasi, Ghana," *Health Policy OPEN*, vol. 5, pp. 100–108, Dec. 2023, doi: 10.1016/j.hpopen.2023.100108.
[20] M. Stasik, "The popular niche economy of a ghanaian bus station: Departure from informality," *Africa Spectrum*, vol. 53, no. 1, pp. 37–59, Apr. 2018, doi: 10.1177/000203971805300103.
[21] K. B. Yusuff and A. Wassi Sanni, "Itinerant vending of medicines inside buses in Nigeria: vending strategies, dominant themes and medicine-related information provided.," *Pharmacy practice*, vol. 9, no. 3, pp. 128–35, 2011.
[22] E. M. Azila-gbettor, E. A. Atatsi, and E. D. Adigbo, "Hawking of medicinal drugs : The perspective of the Ghanaian Consumer," *Research on Humanities and Social Sciences*, vol. 4, no. 11, pp. 37–44, 2014.
[23] B. A. Brown and M. G. Rammidi, "Manifestations of service culture among street vendors in Botswana," *International Journal of Business and Management*, vol. 9, no. 9, pp. 245–259, Aug. 2014, doi: 10.5539/ijbm.v9n9p244.
[24] M. P. Singh, S. K. Chand, K. B. Saha, N. Singh, R. C. Dhiman, and L. L. Sabin, "Unlicensed medical practitioners in tribal dominated rural areas of central India: Bottleneck in malaria elimination," *Malaria Journal*, vol. 19, no. 1, p. 18, Dec. 2020, doi: 10.1186/s12936-020-3109-z.
[25] A. S. Oyeyemi, B. E. Ogunnowo, and O. O. Odukoya, "Patent medicine vendors in rural areas of Lagos Nigeria: Compliance with regulatory guidelines and implications for malaria control," *Tropical Journal of Pharmaceutical Research*, vol. 13, no. 1, pp. 163–169, Feb. 2014, doi: 10.4314/tjpr.v13i1.23.
[26] V. Jaishankar and L. Sujatha, "A study on problems faced by the street vendors in Tiruchirappalli city," *SSRG International Journal of Economics and Management Studies (SSRG-IJEMS)*, vol. 3, no. 9, pp. 42–45, 2016.
[27] A. A. Amin, V. Marsh, A. M. Noor, S. A. Ochola, and R. W. Snow, "The use of formal and informal curative services in the management of paediatric fevers in four districts in Kenya," *Tropical Medicine and International Health*, vol. 8, no. 12, pp. 1143–1152, Dec. 2003, doi: 10.1046/j.1360-2276.2003.01140.x.
[28] P. Agyei-Baffour, A. Kudolo, D. Y. Quansah, and D. Boateng, "Integrating herbal medicine into mainstream healthcare in Ghana: Clients' acceptability, perceptions and disclosure of use," *BMC Complementary and Alternative Medicine*, vol. 17, no. 1, p. 513, Dec. 2017, doi: 10.1186/s12906-017-2025-4.
[29] E. Bamberger and P. Bamberger, "Unacceptable behaviours between healthcare workers: just the tip of the patient safety iceberg," *BMJ Quality & Safety*, vol. 31, no. 9, pp. 638–641, Sep. 2022, doi: 10.1136/bmjqs-2021-014157.
[30] M. Sudhinaraset, M. Ingram, H. K. Lofthouse, and D. Montagu, "What is the role of informal Healthcare providers in developing countries? A systematic review," *PLoS ONE*, vol. 8, no. 2, pp. 1–12, Feb. 2013, doi: 10.1371/journal.pone.0054978.
[31] M. Gautham, K. M. Shyamprasad, R. Singh, A. Zachariah, R. Singh, and G. Bloom, "Informal rural healthcare providers in North and South India," *Health Policy and Planning*, vol. 29, no. SUPPL. 1, pp. 20–29, Jul. 2014, doi: 10.1093/heapol/czt050.
[32] T. Yeboah, L. Owusu, A. A. Arhin, and E. Kumi, "Fighting poverty from the street: Perspectives of some female informal sector workers on gendered poverty and Livelihood portfolios in Southern Ghana," *Journal of Economic and Social Studies*, vol. 5, no. 1, pp. 5–15, Jan. 2015, doi: 10.14706/jecoss11511.
[33] A. Spire and A. Choplin, "Street vendors facing urban beautification in Accra (Ghana): Eviction, relocation and Formalization," *Articulo – revue de sciences humaines*, no. 17–18, Feb. 2017, doi: 10.4000/articulo.3443.
[34] J. B. Forkuor, K. O. Akuoko, and E. H. Yeboah, "Negotiation and management strategies of street vendors in developing countries: A narrative review," *SAGE Open*, vol. 7, no. 1, pp. 1–13, Jan. 2017, doi: 10.1177/2158244017691563.
[35] J. Oppong and D. Williamson, "Locating itinerant drug Vendors in Ghana's health care system," *African Geographical Review*, vol. 21, no. 1, pp. 43–58, Dec. 2001, doi: 10.1080/19376812.2001.9756160.
[36] Ghana Statistical Service, "Ghana living standards survey round 7 (GLSS7)," *Ghana Statistical Service*. pp. 1–343, 2019. [Online]. Accessed: Feb. 04, 2020. Available: https://statsghana.gov.gh/gsspublications.php?category=MTAwMjg3Mzk3NC4zMDc=/webstats/1opr93rn57.
[37] E. Apetoh, M. Tilly, C. Baxerres, and J. Y. Le Hesran, "Home treatment and use of informal market of pharmaceutical drugs for the management of paediatric malaria in Cotonou, Benin," *Malaria Journal*, vol. 17, no. 1, p. 354, Dec. 2018, doi: 10.1186/s12936-018-2504-1.
[38] A. B. Owusu, S. Abrokwah, and S. Frimpong, "Analysis of the spatial and temporal dynamics of street hawking: A case study of the Accra metropolitan area," *Journal of Geography and Geology*, vol. 5, no. 4, pp. 1–12, Nov. 2013, doi: 10.5539/jgg.v5n4p169.
[39] J. Wassholm and A. Sundelin, "Emotions, trading practices and communication in transnational itinerant trade: encounters between 'Rucksack Russians' and their customers in the late nineteenth- and early twentieth-century Finland," *Scandinavian Economic History Review*, vol. 66, no. 2, pp. 132–152, May 2018, doi: 10.1080/03585522.2018.1466725.
[40] J. J. Rolison, Y. Hanoch, S. Wood, and P.-J. Liu, "Risk-taking differences across the adult life span: A question of age and domain," *The Journals of Gerontology: Series B*, vol. 69, no. 6, pp. 870–880, Nov. 2014, doi: 10.1093/geronb/gbt081.
[41] I. of Medicine, *Retooling for an aging America: Building the health care workforce*. Washington, D.C.: National Academies Press, 2008. doi: 10.17226/12089.

[42] L. W. Swantz, *The medicine man among the Zaramo of Dar Es Sallam*. 1990. Accessed: Feb. 04, 2020. [Online]. Available: https://www.diva-portal.org/smash/get/diva2:273654/FULLTEXT01.pdf.
[43] S. Y. Y. A. Ouédraogo, E. J. Sisawo, and S. L. Huang, "Sexual abuse and risky sexual behaviors among young female hawkers in Burkina Faso: A mixed method study," *BMC International Health and Human Rights*, vol. 17, no. 1, p. 1, Dec. 2017, doi: 10.1186/s12914-016-0109-8.
[44] Bassi PU *et al.*, "Prevalence and determinants of self-medication practices among Nigerians," *African Journal of Health Sciences*, vol. 34, no. 5, pp. 634–649, 2021.
[45] E. O. Igudia, "Exploring the theories, determinants and policy options of street vending: A demand-side approach," *Urban Studies*, vol. 57, no. 1, pp. 56–74, Jan. 2020, doi: 10.1177/0042098019835736.

BIOGRAPHIES OF AUTHORS

Joy Ato Nyarko is a Medical Sociologist and a faculty member at University of Health and Allied Sciences, Ho, Ghana. He has been working with the Department of General and Liberal Studies since 2018 and is interested in health seeking behaviour, medicine hawking, medicine use, and socio-cultural determinants of health. He can be contacted at email: janyarko@uhas.edu.gh.



Kofi Osei Akuoko is a Professor of Sociology at Department of Sociology and Social Work, Faulty of Social Sciences, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana. He was until recently the Director for the Centre for Cultural and African studies of the Kwame Nkrumah University of Science and Technology. His research interests span across organizational behaviour, human resource management, health, deviance, and criminology. He can be contacted at email: kofiosei.akuoko@yahoo.com.

Jonathan Mensah Dapaah is a Professor of Sociology at Department of Sociology and Social Work, Faulty of Social Sciences, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana. He has published in the area of HIV/AIDS care and treatment, sexual and reproductive health, and social aspects of health in general. He can be contacted at email: jmdapaah@gmail.com.

Nana Yaa Serwaa Akuoko has Bachelor's degree in Sociology with experiences in gender, social care and family protection, and Masters in Global Health Care Management, with experiences in leadership management, global changes within the health and social care sectors, multi-cultural and international dimensions of healthcare management. She has qualitative and quantitative skills as well as project planning, with a proven track record in training, and genuine passion for addressing issues. She can be contacted at email: nayasa2020@yahoo.com.

Egwolo Perpetual Iyengunmwena has a Bachelor and Master's degree in accounting and accounting and finance respectively. She has a keen interest in government policy formation and its impact on the various sectors in the micro economy. She has statistical, quantitative, and qualitative skills as well as experience in investment analysis. She can be contacted at email: egwolojoboy@yahoo.com.