KNUST Centre for Injury Prevention and Research,
College of Health Sciences, KNUST

Injury Prevention and Research Conference

Theme: "Nipping Ghana's Injury Menace in the Bud-Harnessing Evidence from Local Research"

May 5-6, 2026

Mastercard Impact Building,

KNUST - Kumasi

BOOK OF ABSTRACTS

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CONFERENCE INFORMATION

Name: Injury Prevention and Research Conference

Acronym: IPaRC

Postal address: College of Health Sciences, PMB - UPO, KNUST, Kumasi

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Website: www.injuryconference.com;
https://kumasiinjury.org

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INJURY PREVENTION AND RESEARCH CONFERENCE (IPaRC) 2026

Theme: *"Nipping Ghana's Injury Menace in the Bud-Harnessing Evidence from Local Research"*

May 5-6, 2026 | Mastercard Impact Building, KNUST - Kumasi

Opening Ceremony

Opening prayer	Prof. Veronica Dzomeku
General welcome of guests - MCs	Drs. Joe Bonney & Isaac Yankson
Introduce Chairperson (Prof. Christian Agyare)	MCs
Chairperson's remarks	
MCs invite LOC Chair to introduce conference	
Introduction of conference	Prof. Adam Gyedu
Brief remarks from Profs. Peter Donkor & Charles Mock	
Introduction of Keynote Speaker (Dr. George Kwadwo Owusu)	Mrs. Estella A. Boateng-Osei
KEYNOTE ADDRESS	
Launch of KNUST Injury Prevention & Research Center by Vice Chancellor	
Closing remarks by Chairperson	
Vote of thanks	Ms. Akofa Bart-Plange
Closing prayer	Mr. Bernard Barnie
Photos	

Closing Ceremony

Introduction of Guest Lecturer (Prof. Williams Ackaah)	Ms. Freda Botwe
GUEST LECTURE	
Remarks by Profs. Donkor & Mock	
Closing remarks by LOC Chair	
Vote of thanks	Ms. Abena Abebrese

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WELCOME ADDRESS

Our keynote speaker, Dr. George Kojo Owusu, Chief Executive Officer of the National Ambulance Service; Our guest lecturer, Prof. Williams Ackaah of the Building and Road Research Institute;

Deans of the School of Medical Sciences and School of Public Health and other deans; Head of the Department of Surgery and other heads of department; Principal Investigators of the KNUST Trauma Project, Profs. Peter Donkor and Charles Mock; Representatives from the Ministry of Health, Ghana Medical Association, Ghana Police Service, Ghana National Fire Service, National Disaster Management Organization; Members of the media; the KNUST community; colleague researchers; ladies and gentlemen:

Good Morning.

The Vice Chancellor of KNUST, Prof. Rita Akosua Dickson - represented by the Provost of the College of Health Sciences, Prof. Christian Agyare); On behalf of the organizing committee, I warmly welcome you to the first injury conference hosted by the KNUST Center for Injury Prevention and Research, in collaboration with the University of Washington and other partners.

The Center is a spin-off of the Trauma Project, which has trained over 40 scholars in injury research. These scholars have earned Master's and PhD degrees and contributed to addressing key injury control priorities in Ghana, resulting in over 100 peer-reviewed publications. Yet, despite this progress, the burden of injury in Ghana persists. This makes today's conference both timely and necessary – to bring stakeholders together, share knowledge, and develop practical solutions, while identifying new directions for research.

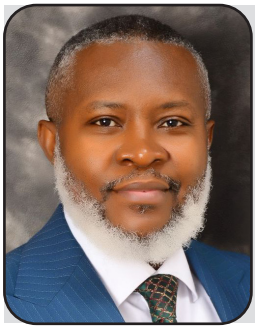
I would like to acknowledge the tireless efforts of the organizing committee in putting together what promises to be a stimulating program.

If any committee members are present, kindly give us a wave.

We trust that this conference will offer valuable opportunities for learning, collaboration, and networking, and we encourage your active participation to ensure its success.

Thank you all for being here.

Prof. Adam Gyedu
Chairman,
Central Organising Committee



Profile of Guest Speaker
DR. GEORGE KOJO OWUSU,

Chief Executive Officer,
National Ambulance Service, Ghana

Dr. George Kojo Owusu is a distinguished healthcare professional whose career has been defined by an unwavering commitment to saving lives and building robust emergency medical systems in Ghana. A proud alumnus of the Kwame Nkrumah University of Science and Technology, where he earned his MBChB from the School of Medical Sciences, Dr. Owusu returns today not merely as a guest but as a testament to the excellence this institution cultivates.

Dr. Owusu is a seasoned Emergency Physician Specialist and Chartered Administrator with over 20 years of dedicated experience in delivering specialist emergency medical services. He holds a Fellowship of the Chartered Institute of Administrators and Management Consultants, a specialist qualification in Emergency Medicine from the Ghana College of Physicians and Surgeons, an Executive MBA in Healthcare Management from the Paris Graduate School of Management, and a Master of Arts in Health Law and Ethics from the University of Ghana School of Law a multidisciplinary academic portfolio that uniquely positions him at the intersection of clinical excellence, governance, and health policy.

Dr. Owusu currently serves as the confirmed Chief Executive Officer of the National Ambulance Service (NAS), Ghana's foremost pre-hospital emergency care institution. In this role, his core responsibilities include providing strategic leadership for the nationwide delivery of pre-hospital emergency care and spearheading the development of a robust, integrated Emergency Medical Services (EMS) system.

Since assuming leadership, Dr. Owusu has been driving significant institutional reforms, including advancing plans to establish an Ambulance Council to regulate emergency service providers and ensure proper certification and standards within the Service.

Prior to his current appointment, Dr. Owusu served as Medical Director of Health Services at Takoradi Technical University, where he oversaw the transformation of the university's health post into a fully accredited polyclinic. He has also served as Head of the Accident and Emergency Department at a regional hospital, Medical Superintendent and Lead Clinician at a government hospital, and as a Part-time Lecturer in Health Sciences, combining clinical, administrative, and academic service throughout his career.

He is a member of the Ghana Medical Association, the Ghana College of Physicians and Surgeons, and the Emergency Medicine Society of Ghana.

Profile of Guest Lecturer
PROF. WILLIAMS ACKAAH

Deputy Director at the Building and Road Research Institute of the Council for Scientific and Industrial Research (CSIR-BRRI), Kumasi

Prof. Williams Ackaah is a Principal Research Scientist and Deputy Director at the Building and Road Research Institute of the Council for Scientific and Industrial Research (CSIR-BRRI) in Kumasi, Ghana. He holds a Doctor of Engineering (Dr.-Ing.) in Traffic Engineering from the University of the German Federal Armed Forces, Munich, as well as an M.Phil. in Transportation Engineering and a BSc in Civil Engineering, both from Kwame Nkrumah University of Science and Technology (KNUST), Kumasi. He also holds a Diploma in Road Traffic Safety from Lund University, Sweden.

He is the project lead for Ghana's National Road Traffic Crash Statistics programme and an Associate Professor of Transport Studies. Prof. Ackaah also serves as Dean of the Faculty of Built Environment at the CSIR College of Science and Technology. He is a registered professional engineer and a Fellow of the Ghana Institution of Engineering, with research interests in road safety and transport systems.

MAIDEN INJURY CONFERENCE 2026
CHAIRMAN (PROVOST)'S ADDRESS

Distinguished Guest Speaker, Invited guests, esteemed colleagues, researchers, public health practitioners, policymakers, media, ladies and gentlemen.

It is both a profound honour and a privilege to stand before you as Chairman of this important maiden conference — a gathering that I dare say is long overdue, and one whose theme speaks with the kind of urgency that can no longer be whispered in corridors but must be declared from platforms such as this one.

"Nipping Ghana's Injury Menace in the Bud — Harnessing Evidence from Local Research."

Let us sit with those words for a moment. Nipping in the bud. Not managing. Not coping. Not reacting. But preventing and intervening at the root, before the flower of tragedy fully blooms. That is the spirit with which we are assembled here today.

This conference has been made possible by the KNUST Fogarty Injury Research project, a training grant awarded by the Fogarty International Center, National Institutes of Health, USA, with the project titled "Strengthening injury control research in Ghana and West Africa" and has been in existence since 2006. For the past 20 years, the project has nurtured strong partnerships with various stakeholders and have trained about 43 MPH/MPhil/PhD graduates who have all remained in Ghana. The graduates have completed research on injury related topics and will share interesting findings during this conference. I am also happy that the Injury Project leadership has not only trained injury research leaders, but has created a national platform for dialogue through this conference. The establishment of the KNUST injury Prevention and Research Center at the College of Health Sciences will further advance information sharing among relevant stakeholders on a continuous basis.

Injuries are not freak events. They are predictable and preventable. Yet across our nation, communities, and families, they continue to exact a devastating toll by claiming young lives, disabling productive citizens, and straining a national budget already under pressure. Road traffic crashes, drowning, burns, falls, and workplace injuries together constitute a public health emergency that demands our collective resolve.

Ladies and gentlemen, we have known about this burden for some time. Data has been collected. Studies have been conducted. Reports have been written and placed on shelves. Yet there remains a troubling gap, a chasm, between what research tells us and what policy does with it. Too often, we have borrowed solutions designed for roads in Europe, drowning prevention programmes built for Australian beaches, or workplace safety frameworks calibrated for factories in East Asia. Some of these tools have merit. But they were not born from our soil. They do not always speak to our context, our culture, our geography, or our governance realities. This is precisely why this conference's theme is so vital. Harnessing evidence from local research is not a rejection of global knowledge. Rather, it is an insistence on its translation. It is a call for solutions that are grounded here, in Ghana, tested here, and owned here.

Ghanaian researchers, many seated in this hall, have been mapping injury patterns, identifying risk factors, and piloting interventions right here at home. That evidence deserves to sit at the centre of our policy conversations, not gather dust in journals policymakers rarely read.

To our researchers: share your findings boldly to ensure your work reaches someone who can act on it. To our policymakers: engage seriously with what is presented here; lives depend on it. To all of us: let us leave with commitments, not just frameworks but commitments to implement what works and to hold ourselves accountable.

Ghana has the talent, the institutions, and the will to confront its injury burden decisively. What has sometimes been missing is the collective resolve to place this issue at the top of our national agenda, and to trust our own evidence to guide the way.

On behalf of the organising committee, I welcome you warmly to this conference. I wish our deliberations the fruitfulness they deserve, and I look forward to the conversations, the revelations, and the resolutions that these days will produce.

Thank you.

Prof. Christian Agare
Chairman, Injury Conference 2026

ABSTRACTS

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This document contains abstracts that were presented in some format (oral only; poster only; oral or poster) during the Injury Prevention and Research Conference, 2026. All authors who submitted an abstract also agreed to have their work published in the book of abstracts via web or print.

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From 3,000 Deaths to Zero: Predicting Time to Reach Vision zero Death in Ghana

J. Damsere-Derry, J. Larley, A. Gyedu, P. Donkor, C. Mock

ABSTRACT

Achieving zero road traffic deaths, commonly framed as *Vision Zero* is an ambitious global target grounded in the Safe System approach. In Ghana, annual road traffic fatalities remain high, with recent estimates approaching 3,000 deaths. Understanding long-term trends and projecting future trajectories is essential for assessing the feasibility of reaching zero fatalities. We sought to understand the trends in road traffic deaths in Ghana over the past 20 years and how feasible it is to achieve the vision zero target. Using the Building and Roads Research Institute's database of police-reported crashes, we analyzed crash fatalities for 2005-2024. We assessed the significance of trends over time for rates of death (deaths/100,000/year). Using negative binomial regression, we calculated incidence rate ratios (IRR) of death. There were 41,960 total road traffic deaths during 2005-2024, including: 16,088 vehicle occupants; 15,902 pedestrians; 8,685 motorcyclists (riders and pillion riders); and 1,285 bicyclists. Total traffic death rate declined marginally (IRR = 0.990; 95% CI: 0.982–0.999; equivalent to a 1% decrease per year). There were significant decreases in death rates for occupants (-3.0% per year), pedestrians (-2.7%), and bicyclists (-8.2%). Death rates for motorcyclists increased (+9.1%), becoming the leading cause of traffic deaths in 2024. Death rates did not change for 15-59-year-olds, but decreased for <15-year-olds (-3.9%) and 60+ year-olds (-1.8%). Decreases for children and the elderly were driven by decreases in pedestrian deaths, but this mechanism remained the leading cause of traffic death for children and the elderly for all years. The total road traffic death rate has declined marginally, with decreases in occupant, pedestrian, and bicyclist deaths being partly offset by increases in motorcycle deaths. Safety efforts for pedestrians and vehicle occupants should be continued and there needs to be increased attention to motorcycle safety, especially helmet promotion.

Too Fast, Too Slow, Too Deadly: The Hidden Crisis of Speed on Ghana's Roads

J. Damsere-Derry, F. Afukaar, P. Donkor, C. Mock

ABSTRACT

Speed remains a critical but insufficiently managed risk factor in road traffic injuries in Ghana. This study synthesizes evidence from empirical speed studies, crash analyses, and intervention assessments to inform policy-oriented speed management strategies. Findings

from nationwide speed measurements indicate widespread non-compliance, with mean urban speeds reaching 87 km/h against a 50 km/h limit, and over 60% of vehicles exceeding limits on rural highways. Beyond absolute speed, recent analyses highlight the significant role of speed dispersion; the variation between fast and slow-moving vehicles as a risk factor for traffic crashes. Rural highway data (2013–2022) show that approximately 43% of fatalities are associated with driver errors linked to speed differentials, particularly involving interactions between heavy trucks and faster vehicles. The study further draws on evidence from the Abuakwa–Bibiani Highway, demonstrating that traffic calming interventions, while effective in reducing speeds and improving safety outcomes, can have negative implications for mobility and pavement conditions if not properly designed and managed. Importantly, though speeds are generally low in areas with traffic calming measures, pedestrian vulnerability remains high, with over 30% of fatalities involving pedestrians, many of whom are children exposed to high-speed traffic environments. There were also collision types that could be attributable to the inadvertent effects of poorly installed speed calming devices. Drawing on international best practices and the Safe System approach, the paper advocates for a comprehensive speed management framework encompassing legislative reforms, enhanced enforcement through technology, context-sensitive engineering measures, and sustained public education. The findings underscore that effective speed control addressing both excessive speed and speed variability is essential for reducing fatalities, improving transport system efficiency, and ultimately helping Ghana to achieve their national road safety target.

The Effect of Aerosols on Road Crashes in Southern Ghana

L. Ofosu-Sekyere

ABSTRACT

Globally, road crashes claim over 38,700 lives annually due to fog-related accidents, with impaired visibility being a critical factor. This study investigates the impact of atmospheric aerosols on visibility and road crashes in Southern Ghana, explicitly focusing on the Kumasi-Accra and Accra-Cape Coast Highways, routes that account for more than 75% of reported crashes under low-visibility conditions. The study utilized mobile air quality monitors to measure aerosol concentrations (PM**1.0**, PM**2.5**, PM**10**) and correlated these measurements with crash data from 1990 to 2021. Regression analyses revealed that PM**2.5** levels significantly influenced crashes on the Kumasi-Accra Highway, exhibiting a strong correlation ($R = 0.740$, $R^2 = 0.547$, $p < 0.05$), indicating behavioural adaptations under poor visibility conditions. In contrast, the relationship was weaker on the Accra-Cape Coast Highway, where PM concentrations explained less than 7.6% of the crash variability ($R = 0.275$, $R^2 = 0.076$, $p > 0.05$). Interestingly, visibility impairment explained only 4.1% of the variability in crash occurrences, highlighting the multifaceted nature of road safety

challenges. The findings emphasize the necessity for adaptive speed limits, enhanced air quality monitoring, stricter emission standards, and early warning systems to mitigate risks. This research provides critical insights into the role of air quality on road safety, offering actionable recommendations for policy and road infrastructure development in Ghana.

The Impact of Cross-Border Mobility on Road Crashes in Ghana: Foreign-Registered Vehicle Involvement on Ghanaian Roads

J. Larley

ABSTRACT

Road traffic crashes claim approximately six lives daily in Ghana, imposing an annual economic burden estimated at 1.6% of GDP. As a strategic transit state within the ECOWAS free movement framework, Ghana's road network accommodates substantial volumes of foreign-registered vehicles from landlocked neighbours such as Burkina Faso, Mali, and Niger. These vehicles operate across national trunk roads, urban arterials, and inter-city corridors, yet the relationship between cross-border vehicular mobility and road crash incidence remains virtually unexamined in the empirical literature. This study addresses that gap by investigating the patterns, spatial distribution, severity, and predictive risk factors of crashes involving foreign-registered vehicles on Ghanaian roads. The study adopts a mixed-methods design. Quantitative analysis draws on police-reported crash data from the BRRI National Road Traffic Accident Database covering January 2020 to December 2024. Statistical modelling employs logistic regression, random forest, gradient boosting, and negative binomial generalized linear models using Stata MP17 and R. ArcGIS Pro is used for crash mapping, spatial distribution analysis, and hotspot identification across the road network. Qualitative data are obtained through structured interviews with 25–30 purposively sampled foreign-registered vehicle drivers at border posts, rest stops, and enforcement checkpoints, exploring route familiarity, enforcement experiences, and perceived safety risks. Descriptive analysis reveals that foreign-registered vehicles account for 6.1% of crash-involved vehicles over the study period. Critically, their Fatality Index of 17.8% substantially exceeds that of domestically registered vehicles (15.3%), indicating a disproportionate lethality risk that warrants dedicated empirical inquiry. Crash involvement is observed across both trunk road corridors and urban road networks in Accra, Kumasi, and Tema. The study is expected to provide the National Road Safety Authority, Ghana Highway Authority, and ECOWAS partner institutions with evidence-based recommendations for strengthening cross-border vehicle safety standards, targeted enforcement, and infrastructure interventions—contributing directly to Ghana's commitments under the UN Decade of Action for Road Safety 2021–2030.

Helmet utilization and its related barriers among motorcyclists in the Tamale Metropolitan Area, Northern Ghana

B. N. Adjei, E. K. Nakua, P. Donkor, C. Mock

ABSTRACT

Road traffic injuries among motorcyclists have persisted as a serious public health threat, particularly in this era of a global increase in motorization in low-income and middle-income countries. Injuries to the head and neck are the main cause of severe injury, disability, or death in a motorcycle-related accident. About 88% of motorcycle crash fatalities are due to head trauma. Motorcycle helmets prevent more than one million deaths resulting from motorcycle accidents each year and reduce the risk and severity of injuries by 72% and the likelihood of death by up to 39%. This study aimed to determine helmet utilization and its related barriers among motorcyclists in the Tamale Metropolitan Area, Northern Ghana. An analytic cross-sectional study was employed for this study among motorcyclists and retail outlets in the Tamale Metropolitan Area between March and April 2021. Data were collected through observations and face-to-face interviews. Frequency, percentage, mean, and median were used to summarize categorical and continuous data. Bivariate and multivariable Poisson regression model for a binary outcome (with a log link and robust standard errors) was used to explore the factors associated with helmet use prevalence whilst the bivariate and multivariable logistic regression model was used to explore the factors associated with helmet availability. Confidence intervals were computed at a 95% confidence level and a p-value of 0.05 or less was considered statistically significant. Helmet utilization among the motorcyclists was observed as 21.3% and self-reported helmet use as 37.8%. About 26.7% of the riders and 5.7% pillion riders used helmets. Overall helmet use decreased from 30.0% in 2010 to 22.1% in 2021, and among riders specifically from 34.2% to 26.7%, both showing statistically significant reductions in helmet use in northern Ghana compared to 2010. The prevalence rate of helmet use among motorcycle riders was 69% higher during the day compared to the night, 58% higher during the weekend compared to weekdays, 46% higher in males than females, and 18% lower on local roads compared to highways, 67% lower in younger riders than elderly riders and 29% lower in riders who carried pillion riders compared to those who carried no pillion riders. Most reported barriers to helmet use were inconvenience (46.3%), discomfort from heat (40.3%), and forgetfulness (33.8%). About 57.1% of the retail outlets sold motor helmets. Helmet availability was significantly associated with the type of retail outlet, the location of the shop, and nationality of the vendor. The average cost of a standard helmet was GHC 50.00 (8.50 USD), while the average cost for a non-standard helmet was GHC 35.00 (6.80 USD). Generally, motorcycle helmet use prevalence declined in northern Ghana over the past decade, which was at the same time declared as Decade of Action for Road Safety 2011 – 2020, putting motorcyclists at higher risk of road traffic fatalities. Helmet use among riders was significantly influenced by riding in the day, weekend riding, type of road, age of rider, carrying a pillion rider, and

gender wile helmet use among pillion riders was influenced by the age of pillion rider, age of rider, and riding in the evening. This highlights the need for public health interventions targeting young or female riders, pillion riders, and those driving during evening hours or on local roads. The 3 most important barriers to helmet use were inconvenience from helmet use, discomfort from heat, and forgetfulness. Motorcycle helmets were available in about 6 in 10 retail outlets in northern Ghana; however, non-standard helmets, which have the potential of undermining the benefits of helmets, were also available in some outlets.

Communication and Coordination During Mass Casualty Incidents: Experiences of Staff from a District-Level University Hospital in Ghana

A. Gyamfi, A. B. Antwi, J. Tetteh, V. Bam, V. M. Dzomeku, C. N. Mock, E. Nakua, C. Amoah, O. K. Wusu-Ansah, K. A. Akrasi, P. Donkor

ABSTRACT

Mass casualty incidents (MCI) are of significant public health concern. Most health facilities in developing countries often struggle to be fully prepared for MCI. MCI preparedness among other factors involves important processes like communication among staff on the emergency response team, patients, and the public; and the coordination of emergency care services delivery. In this study, we explored staff experiences at a district-level university hospital in Ghana regarding communication and coordination during MCI. We conducted an exploratory descriptive qualitative study at a University Hospital between August 2024 and February 2025. We collected data through in-depth interviews. We used a purposive sample of 15 hospital staff. The interview sessions were audio-recorded and transcribed verbatim. We analyzed the data using Braun and Clarke's (2006) thematic analysis approach. A total of 15 participants (doctors, nurses, pharmacists, medical laboratory scientist, and administrative staff) were interviewed. Thematic analysis of the data revealed two major themes (communication and coordination) and six sub-themes. The communication sub-theme encompassed internal and external communication as well as communication challenges. The coordination sub-theme comprised decision-making and leadership structures, human resource mobilization, and teamwork and support roles. Internal communication was mostly done through hospital landlines and mobile phones whereas external communication was achieved through Mutual Aid Agreements with other hospitals. Communication challenges included being unable to reach other wards on the landlines and the unavailability of beds at the external facilities. There was no clear leadership structure, leading to ad hoc decision-making by the senior-most medical officer on duty. However, teamwork within the emergency unit was effective during 3 MCIs management. Human resource mobilization was done through staff redeployments from

other wards to the emergency unit during patient surge. Implementing standardized communication protocols, clearly defined leadership structures, and improving coordination mechanisms between hospitals may enhance emergency care delivery during MCIs.

Exploring Patient Flow, Identification and Triage During Mass Casualty Incidents in a District-Level University Hospital in Ghana

A. Gyamfi, J. Tetteh, C. N. Mock, V. Bam, V. M. Dzomeku, E. Nakua, C. Amoah, O. K. Wusu-Ansah, A. B. Antwi, K. A. Akrasi, P. Donkor

ABSTRACT

Mass casualty incidents (MCIs) pose a significant public health problem which often overwhelms healthcare systems in low- and middle-income countries. Effective patient flow, accurate patient identification, and timely triage are vital components of MCI response. This study explored how patient flow, identification, and triage are managed during MCIs in a university hospital in Ghana. A qualitative descriptive design was used. Fifteen hospital staff with experience in managing MCIs were purposively sampled. Data were collected through interviews using a semi-structured interview guide between August 2024 and February 2025. Braun and Clarke's thematic analysis was used to inductively analyse the data. Fifteen participants, including unit heads, doctors, nurses, and administrative staff, were interviewed. Three main themes emerged that explained patient flow, methods of patient identification, and triage during MCIs. Patients often arrive via non-ambulance transport such as private vehicles, commercial cars or police pickups. Patient identification is based on biometric systems for known patients, while personal belongings and temporary labels are used for unidentified or unconscious patients. Triage practices were guided by colour-coded systems; however, re-triage was informal, and non-emergency and non-clinical staff demonstrated limited knowledge of triage procedures. The findings reveal adaptive staff practices but highlight gaps in pre-hospital care, patient identification systems, and triage training. Integrating pre-hospital ambulance dispatch, expanding digital identification system, standardising re-triage protocols, and extending triage training hospital-wide could enhance MCI preparedness.

A Rare Complication Revisited: Management of a Broken Dental Needle in a Pediatric Patient

N. T. A. Gyimah, R. A. Ampoh, K. O. Owusu-Ansah, K. A. Twum, Y. A. Afreh, A. A. Asamoah, J. Mensah, N. Anokye, J. Olesu, N. A. O. Prempeh, I. Mohammed, S. Obiri-Yeboah

ABSTRACT

Needle breakage from dental local anaesthesia has become rare since the introduction of non-reusable, stainless steel dental anaesthetic needles. However, when it occurs, this rare complication can pose significant risks to the patient if not managed promptly and effectively and can also be a nightmare to the practitioner. This case report details a successful multidisciplinary approach to retrieval of a broken dental needle in an uncooperative paediatric patient. We present a case of a broken needle in an anxious and uncooperative 8-year-old patient. Limited computed tomography revealed a linear hyperdense foreign body in the pterygomandibular space. Under conscious sedation with ketamine at the dental clinic, careful dissection into the pterygomandibular space was done to retrieve the needle. The patient recovered uneventfully with no signs of infections or nerve damage. Care should be taken in managing anxious patients to prevent complications. In the event of a broken dental needle, thorough evaluation and planning and careful surgical technique should be employed to retrieve the foreign body promptly.

Capacity for Emergency Nursing in Public and Faith-Based District Hospitals in Ashanti Region Ghana: Current Status and Opportunities for Strengthening

A. K. Karikari

ABSTRACT

Emergency care is a vital component of healthcare systems globally, with nurses forming the largest proportion of the workforce and serving as frontline providers. They are responsible for receiving patients, triaging, and collaborating with multidisciplinary teams to ensure timely management of emergency conditions. In Ghana, nurses at all levels are mandated to manage and resuscitate emergency cases. However, many nurses lack formal training in emergency nursing, which limits their clinical competence in handling life-threatening situations. Strengthening nurses' capacity through continuous professional development tailored to their educational needs is essential for enhancing their autonomy, confidence, and effectiveness in emergency care delivery. This study employed a convergent parallel

mixed-method design to assess the capacity of nurses in emergency care within district hospitals in the Ashanti Region of Ghana. Six public and five faith-based hospitals were randomly selected. Data were collected concurrently using questionnaires administered to 488 nursing and midwifery staff and interviews with 29 purposively selected nurse leaders. A total of 408 valid questionnaires were analyzed using descriptive and inferential statistics with SPSS version 25, while qualitative data from interviews were thematically analyzed using NVivo 10. Findings revealed that the majority of respondents were young nurses aged 18–39 years, with most being diploma holders and general nurses, while only a small proportion were trained emergency nurses. Although nurses demonstrated competence in managing conditions such as meningitis, external bleeding, and blood transfusion reactions, only 35.6% had adequate overall knowledge of emergency care. Significant knowledge gaps were identified in managing respiratory distress and tension pneumothorax. Factors such as availability of logistics, prior training, and preparedness to work were key predictors of knowledge levels. Inadequate logistics and limited specialized training were major challenges affecting effective emergency care delivery. Participants recommended the development and implementation of targeted training modules through workshops and in-service education to address identified knowledge gaps. The study concluded that emergency nursing capacity in district hospitals is fragmented and generally inadequate, negatively affecting the management of critically ill and injured patients. This situation highlights the urgent need for structured capacity-building initiatives to strengthen emergency nursing practice and support the achievement of universal health coverage in Ghana.

Strengthening Trauma Care Workforce Competency in Ghana: Evidence on Clinical Knowledge Gaps to Inform Education and Retention Strategies

J. Amissah, E. K. Nakua, P. Okyere, P. Donkor, C. Mock

ABSTRACT

Healthcare provider competency is a critical determinant of trauma care outcomes. Accident victims are six times more likely to die where emergency personnel are inadequately trained. Despite Ghana recording 2,756 road traffic fatalities in 2023, competency profiles and knowledge gaps among frontline providers remain poorly documented. This study assessed clinical competency and knowledge gaps among trauma care providers across six Ghanaian regions to inform workforce training and retention strategies. A cross-sectional assessment was conducted among 95 trauma care providers across 52 health facilities in six regions. Competency was measured using 129 scenario-based items across 15 clinical domains, scored as 1 (competent), 0.5 (partial), or 0 (not competent). and aggregated into weighted domain scores using a four-tier clinical priority framework (Tier 1–4; weights:

3.0, 2.0, 1.5, 1.0) adapted from the WHO Emergency Obstetric Care methodology. The composite competency score was derived from the ratio of summed weighted domain scores and adjusted for experience, training recency, and specialization. Golden Hour readiness required achieving 80% or above in all Tier 1 domains. Performance gaps were computed against ATLS-derived domain targets (60% to 80% by clinical criticality) and classified as urgent (>25 percentage points), high (15 to 25), moderate (10 to 15), or low (10 or below). The overall unadjusted competency score was 63.5 ± 17.3 and adjusted to 73.9 ± 19.6. Approximately 9 out of 20 providers had basic proficiency (45.3%), while 20.0% required improvement, 24.2% were proficient, and 10.5% reached an advanced level. Thirty percent were Golden Hour ready, with primary and advanced care pass rates of 29.5% and 9.5%. The Gap analysis revealed pronounced deficits in clinically critical areas. Chest trauma was the only domain classified as requiring urgent intervention (mean 48.2 ± 28.0, gap −26.8 percentage points, 77.9% below target). Four domains had high-priority classifications: abdominal trauma (50.7 ± 26.2, gap −24.3%), neck trauma (46.6 ± 27.3, gap −23.4%), neurological assessment (54.7 ± 21.5, gap −20.3%), and rehabilitation knowledge (40.5 ± 27.5, gap −19.5%). Wound management (87.9 ± 14.7) and hypothermia prevention (86.1 ± 21.7) exceeded targets. Professional cadre was associated with competency (p=0.048), with nursing staff (67.4% of the workforce) showing the highest proportion requiring improvement (27.8%) versus 6.7% among emergency specialists. All six regions failed to reach the 70% competency benchmark. Substantial clinical knowledge gaps persist among trauma care providers in Ghana, particularly in domains critical to early life-saving interventions. The low Golden Hour readiness rate highlights a significant workforce vulnerability with direct implications for preventable mortality and provider confidence in emergency care delivery. There is an urgent need for Cadre-differentiated continuing professional development prioritizing chest, abdominal, neck, neurological, and rehabilitation domains. This evidence supports engagement with the Medical and Dental Council, Nursing and Midwifery Council, and Ghana College of Physicians and Surgeons to embed trauma competency in national professional development frameworks.

Effects of Trauma-related Amputations in Children on Caregivers: An Exploratory Descriptive Study in a Developing Country

P. A. Barnie, V. M. Dzomeku, A. T. Adusei-Gyamfi, B. Barnie, C. Mock, P. Donkor

ABSTRACT

Amputation in children is rare. However, in recent times, amputation in children has increased and trauma is the leading cause in Ghana. Few studies on the effects of amputation on caregivers particularly of children are available. This study aimed to

explore the effects of trauma-related amputations in children on caregivers in Ghana. Using qualitative descriptive phenomenological approach. In-depth interviews were conducted with semi-structured interview guide. Ten (10) informal caregivers of children with amputation were purposively selected from the trauma registry of a tertiary facility in Ghana. Data were analyzed manually using the thematic approach described by Collaizi. Three major themes that emerged from the study were daily activities/social life, finances, and mental health and emotions of the caregivers. Caregivers daily activities are impacted by caring for their amputated children leading to exhaustion. The finances of caregivers are greatly impacted through high cost of treatment and earning loss from staying away from work. Mental health and emotions of caregivers included the feeling of guilt, social exclusion and adoption of coping mechanisms. These significant effects on the caregivers highlighted the gaps in healthcare delivery in Ghana. The study has illuminated the burden of caregiving on caregivers of children with trauma-related amputations. The inconveniences with caring affect all aspects of the caregivers' lives. Provision of counselling services to address the mental health needs of caregivers and decentralization of orthopedic and rehabilitation services would lessen the burden of caregiving.

Prevalence and Predictors of Epilepsy Related Injuriamong Children in Komfo Anokye Teaching Hospital

S. Nsow

ABSTRACT

Epilepsy remains one of the most common neurological conditions among children, often accompanied by a significant risk of physical injury due to unpredictable seizures. This study explored the period prevalence of epilepsy and the predictors of epilepsy-related injuries among children attending the Komfo Anokye Teaching Hospital (KATH) from 2020 to 2024. Using a mixed-methods approach involving retrospective medical record analysis and a caregiver survey. A total of 100 participants were recruited using simple random sampling method. Descriptive statistics were presented in frequency and percentages while statistical significance was 95% confidence interval and p<0.05. we found a declining trend in epilepsy cases over the study period, from 17% in 2020 to 3.5% in 2024. Despite this decline, half (50%) of children with epilepsy had sustained at least one injury, with cuts and bruises being the most common (88%), and 26% of cases involving head injuries. Most injuries occurred at home (60%) and were classified as moderate in severity (76%). Male children had 81% lower odds of sustaining an epilepsy-related injury compared to females (AOR = 0.19; 95% CI: 0.06–0.62; $p = 0.006$). Children with a family history of epilepsy were more than 11 times as likely to experience an injury (AOR = 11.32; 95% CI: 1.31–97.56; $p = 0.027$). Notably, the

risk of injury escalated with older age at diagnosis; children diagnosed at 5 years or older were nearly 90 times more likely to be injured than those diagnosed at 1 year or younger (AOR = 89.74; 95% CI: 8.22–979.79; $p < 0.001$). These findings underscore the urgent need for early epilepsy diagnosis, caregiver education, and injury prevention strategies tailored to the child's age, gender, family context, and socioeconomic background. Integrating epilepsy care with broader child protection and social welfare efforts may reduce the burden of epilepsy-related injuries and improve the quality of life for children living with epilepsy in Ghana.

Prevention of Seizure-Related Injuries: Exploring the Strategies Employed by People Living with Epilepsy and Their Caregivers in Rural Ghana.

D. Korletey

ABSTRACT

People living with epilepsy (PLWE) are at high risk of experiencing seizure-related injuries, which negatively affect their quality of life and that of their caregivers. This study explored the strategies used by PLWE and their caregivers in rural Ghana to prevent such injuries. A qualitative phenomenological design was employed. Data were collected through in-depth interviews with 23 participants (11 PLWE and 12 caregivers) recruited using convenience sampling. Thematic analysis was applied to analyse the data. The most frequently reported injuries included dental injuries, particularly tongue bites, and bodily cuts and bruises resulting from falls. The primary prevention strategy identified was the use of medical interventions, especially adherence to antiepileptic medications and attending regular medical reviews. Antiepileptic medication was the primary strategy for preventing seizure-related injuries. Caregivers played a vital role but often lacked training and support, increasing their emotional and financial burden. It is recommended that the Ministry of Health and Ghana Health Service improve the availability and affordability of antiepileptic drugs, and provide education and training programs for caregivers to enhance their capacity in managing epilepsy and preventing injury effectively.

Awareness and Practices among Mothers and Primary Caregivers of Children under 5 on Child Drowning Prevention in Faana-Tsokome, Greater Accra Region of Ghana

B. Kusimi, C. O. Aidoo

ABSTRACT

Child drowning is a preventable cause of injury, yet evidence on caregiver awareness and prevention practices in high-risk Ghanaian communities remains limited. This study assessed the knowledge, attitudes, practices, and beliefs of mothers and primary caregivers of children under 5 years regarding child drowning prevention in Faana-Tsokome, Greater Accra Region, Ghana. A cross-sectional mixed-methods study was conducted from March to June 2024. Using convenience snowball sampling, 200 mothers and primary caregivers were recruited. A pilot-tested questionnaire was administered before and after a 16-session educational intervention involving lectures, question-and-answer sessions, slideshows, videos, and interactive discussions. Qualitative data were obtained through focus group discussions, stakeholder engagement, and site observation. SPSS was used to compare pre-test and post-test knowledge, attitudes, practices, and beliefs. Most respondents were fishmongers (97%), had basic education (63%), and were married to fishermen (76%). Knowledge that a child could drown in a small amount of water increased from 38% to 79%. Mothers reporting that children should always be supervised near water increased from 79% to 97%. All respondents supported use of water safety equipment at both time points, while preference to learn CPR increased from 73% to 88%. Beliefs also improved after the intervention. Baseline KAP was relatively high, but scores improved after the educational intervention, suggesting that community-based education and stakeholder engagement can strengthen child drowning prevention practices.

Paediatric Injuries and Deaths Associated with Galamsey In Ghana: A Case Series and Proposal for An AI-Enabled Sentinel Surveillance Framework

E. Oppong, I. Mensah

ABSTRACT

Illegal mining ("galamsey") in Ghana creates hazardous environments that pose direct risks to children. Systematic data on child injury and mortality are lacking. Emerging media reports suggest recurrent fatal incidents. Many incidents reported on the radio/social media are not permanently archived online. There is no national injury surveillance system capturing these events. Advances in artificial intelligence (AI) offer new opportunities to enhance surveillance and analyse data to drive advocacy and guide strategies to address galamsey-related injuries and deaths in children. We describe the epidemiology, circumstances and recurring hazard mechanisms of media-reported cases of child fatal injuries associated with galamsey in Ghana and propose an AI-enabled sentinel surveillance framework to support early detection and prevention. AI tools were used to scrape online news portals for reports of galamsey-related injuries and deaths over the past 15 years (from January 2010 to March 2026). Eligible reports describing injury or death in persons <18 years directly linked to illegal mining or abandoned mining pits in Ghana and published by recognisable news outlets were included. Data were extracted and analysed descriptively. Out of 24 separate reported incidents of galamsey-related injuries and deaths, 10 involved children (<18years). A total of 22 children, aged 2.5years to 16 years, reportedly drowned and died in galamsey pits across Ashanti, Eastern, Central, Western, Western North, Bono and Ahafo Regions. 91% involved drowning in abandoned, water-filled galamsey pits. The incidents occurred during routine activities such as walking home, playing, or swimming. No reports described hazard mitigation measures at the sites. There was a record surge of galamsey-related injury incidents in 2025 (10). These findings demonstrate a clear, preventable pattern of paediatric deaths linked to illegal mining in Ghana. The wide geographic distribution and occurrence during routine childhood activities highlight pervasive environmental exposure and inadequate safety protections in at least seven regions. The absence of documented hazard mitigation measures points to critical gaps in the enforcement of environmental and child safety regulations. The surge in reported incidents in 2025 may reflect a true increase in risk, improved reporting, or both, but it signals an urgent need for coordinated public health and regulatory action. While AI-enabled scraping of media reports enabled the aggregation of this fragmented data, underreporting is likely, particularly for incidents that are not permanently archived. This highlights the need for a structured national injury surveillance system. An AI-enabled sentinel surveillance framework that integrates media, health facility, and community data could support early detection of injury clusters, inform targeted prevention strategies such as pit remediation and community education, and strengthen advocacy. Embedding such a system within existing public health and environmental governance structures could shift responses from

reactive to proactive, reducing preventable child deaths. Media-reported cases reveal a preventable pattern of child mortality linked to galamsey. These events likely represent only a fraction of the true burden. Establishing an AI-enabled sentinel surveillance system is critical for monitoring, quantifying, and preventing these avoidable injuries and deaths. We propose an AI-supported surveillance framework that integrates, classifies and locates such cases using natural language processing, geospatial analytics, and real-time alert systems

Noise Exposure Profile and Noise-Induced Hearing Loss Risks of Selected Road Construction Workers in Ghana

I. K. Yankson, A. K. Yalley, A. Bapula, A. F. Ampomah, D. Asenso-Gyambibi, G. E. Merdiemah, F. K. Afukaar, P. Donkor, C. Mock, E. Owusu-Dabo

ABSTRACT

Hearing loss is common among construction workers. This study explored the occupational noise exposure levels of selected road construction workers and determined the noise-induced hearing loss risk levels. It was cross-sectional, exploratory and task-based using dBadge2 PRO noise dosimeter. Convenience sampling was employed in selecting the workers studied. The study population involved carpenters and operators of concrete mixers, bulldozers, excavators, pay-loaders, pneumatic tyre rollers, steel rollers and asphalt-producing plant monitored from seven construction firms actively working in Ashanti and Ahafo Regions, Ghana. This study found that seven out of nine worker groups (77.8%) recorded average noise levels ≥85dBA (ISO/NIOSH limit). The peak noise from all equipment exceeded the ISO/NIOSH limit by 35.7dBA–57.6 dBA. The highest was recorded from bulldozers, followed by, carpenters, excavators, pneumatic tyre rollers, asphalt-production plant, pay-loaders, concrete mixers, small steel roller and heavy steel rollers. The peak, maximum and impulse noise levels indicate that all the worker-groups (100%) are at increased risk of noise-induced hearing loss. Construction managers should deploy quieter equipment, mufflers and sound-dampening mats inside the engines of heavy-duty equipment to attenuate engine noise and also enforce appropriate personal protective equipment (PPE) use.

Hazard Perceptions and Self-Reported Non-Injury Occupational Ailments among Road Construction Workers in Three Middle Zone Regions of Ghana

I. K. Yankson, P. Okyere, A. Bapula, E. Otupiri, F. K. Afukaar, P. Donkor, E. Owusu-Dabo, C. Mock

ABSTRACT

Road construction activities are hazardous. These workers are exposed to hazards with high probability of illness, injury, disability or death. The objective was to determine road workers' perceptions of occupational hazards, ailments experienced and health seeking behaviour. This was an institution-based descriptive cross-sectional study using open-ended questions. A total of 353 road workers from Ashanti, Ahafo and Western North regions reported work-related hazards and ranked the top-three. Workers in each craft/stratum who gave consent were included in the study and interviewed. They also reported work-related ailments and health-seeking behaviour. The workers were primarily young (mean age 32.4 years) and male (97.7%). Most (70.2%) workers were contract/casual staff. Thirty-eight hazards were reported, with the top five being dust (91.5% of workers reported this), extreme temperatures (72.0%), noise (40.5%), fumes (21.8%) and vehicles/trucks (21.1%). Most (86.8%) workers reported a work-related ailment, with the most common being cough (41.1%) and headache (18.9%). Most (87.8%) workers with ailments sought treatment of any kind. Road construction workers in these regions of Ghana have good appreciation of hazards at work and the dangers they pose. Works supervisors should encourage workers on PPE use against dust, noise, fumes and good housekeeping. Regular worker-training on hazards is recommended.

Sustainable Improvements in Injury Surveillance in Ghana

A. Koranteng

ABSTRACT

Injury is a leading cause of death in low- and middle-income countries, yet surveillance systems remain weak, resulting in under-reporting and poor data quality. This study assessed the sustainability of a low-cost intervention aimed at improving injury surveillance at the Komfo Anokye Teaching Hospital (KATH) mortuary in Kumasi, Ghana, and described patterns of injury-related mortality. A retrospective analysis of injury deaths recorded between 2005 and 2006 was conducted using data from mortuary records, intensive care unit logs, and hospital ward registers. Findings were compared

with pre-intervention (pre-1996) and intervention (1996–1999) periods to evaluate long-term impact. The results showed sustained improvement in reporting, with an average of 773 injury deaths per year, compared to 633 during the intervention period and about 70 cases annually before 1996. Males accounted for 73% of deaths, with a mean age of 32.7 years. Transport-related injuries were the leading cause (61%), followed by violence (10%). Notably, 76% of victims were brought in dead, indicating gaps in prehospital care. The study demonstrates that low-cost interventions can produce lasting improvements in injury surveillance. Strengthening data integration, standardization, and emergency care systems is essential for effective injury prevention and control in Ghana.

One Call, Two Outputs: Multilingual Voice-Based Injury Reporting and Surveillance in Ghana

Y. O. Adjei, D. Opoku, B. T. Partey, K. O. Amanqua

ABSTRACT

Provisional figures indicate that Ghana recorded 2,949 road traffic deaths in 2025, the highest in 35 years, from crashes that injured a further 16,714 people. Yet most of those incidents leave no trace in any health database. When injuries go uncounted at community level, health authorities cannot see where resources are needed, cannot track whether interventions are working, and cannot plan effectively for emergencies. The existing surveillance systems and emergency lines that do exist operate entirely in English, a language spoken natively by only around 5% of Ghanaians, while the languages actually spoken by the majority have no equivalent reporting pathway. This paper introduces VoiceTrace, a system designed to close that gap with a basic phone call. Someone who witnesses or is involved in an injury speaks in their own language. The call passes through five automated steps: the speech is transcribed, the transcription is translated into English, a language model extracts structured data fields and generates first-aid guidance simultaneously, the nearest health facility is located from Ghana Health Service records, and the guidance is read back to the caller in the language they spoke. No English, no literacy, and no smartphone are required. One call produces two outputs at once: spoken first-aid advice for the person on the line, and a structured record that enters the health surveillance system directly. Because no labelled dataset of real injury calls exists for any Ghanaian language, and collecting such data raises significant ethical and practical barriers at the prototype stage — we evaluated the system on 126 synthetic injury reports constructed to match published Ghanaian injury distributions. The reports were spread across five languages, Twi, Ga, Ewe, Fante, and Dagbani. Together, these five languages cover the first languages of roughly 85% of Ghana's population, based on the 2021 Population and Housing Census ethnic group figures, which place the Akan group at 45–47%, the Ewe at 13–14%, the Ga-Dangme at 7%, and the Mole-Dagbani cluster at 18–19%. Three test tracks were used to isolate where failures

occur: transcription, translation, and information extraction. Results varied substantially by language. For Twi, the system's extracted records showed substantial agreement with expert annotations ($\kappa = 0.80$), suggesting the output may be reliable enough for further field validation. Accuracy dropped when passing through transcription: at a word error rate of roughly 50%, macro-F1 fell from 0.66 to 0.44. Even so, the extraction logic itself held up. Fante showed moderate agreement ($\kappa = 0.52$), indicating partial reliability. Ga, Ewe, and Dagbani all scored near chance ($\kappa < 0.13$), not because the extraction approach failed, but because the translation step feeding into it was too weak. The bottleneck for those languages is translation infrastructure, not system design. To our knowledge, this is the first system to take a spoken injury report in a Ghanaian language and produce both an immediate spoken response and a structured surveillance record in a single automated pipeline. For Twi, spoken natively by the largest share of the population, the approach works well enough to be meaningful in practice. For Fante it is partially viable. For Ga, Ewe, and Dagbani, this paper provides the first empirical map of exactly what needs to improve before comparable performance becomes achievable across the country's full linguistic range.

Too Far to Care: Spatial Barriers to Trauma Services in Ghana

A. Bart- Plange, A. Geletu, E. E. Kaufmann, E. Tiburu, C. Mock, P. Donkor

ABSTRACT

Deaths from Road Traffic Crashes (RTC) are on the rise in the Ashanti Region of Ghana. Transporting RTC victims to the nearest and most suitable health facility promptly where definitive care can be provided contributes to improved odds of survival. The aim of this study was to analyze the spatial access (availability, travel distance and travel time) of suitable health facilities in the Ashanti Region of Ghana around RTC blackspots to understand where the demand for and supply of appropriate health service for trauma care are geographically located in the region and to reveal any disparities between rural and urban access to emergency care facilities. A geospatial analysis was conducted using secondary data on RTC blackspot locations and health facilities capable of administering definitive care to RTC victims in the Ashanti Region of Ghana. 27 health facilities where definitive care can be given to RTC victims were selected and 104 blackspots were identified in the region. Geographical network analysis was conducted with ArcGIS' closest facility solver to geospatially analyze the distances between health facilities and blackspots and corresponding travel times. Cut-off time constraints were removed and the mode of network travel was set to vehicular drive mode. 10 hospitals were found to be close to all 104 blackspots. Rural blackspots were more than twice as far from hospitals as urban blackspots with sixteen (16) blackspots more than 20km from a hospital. Two (2) hospitals were close to more than 37.7% of the urban blackspots while three (3) were close to about 70% of rural blackspots. One (1) faith- based

facility was close to four (4) blackspots (2 rural and 2 urban). The mean travel time was 8.83minutes in the urban areas and 25.13minutes in the rural areas. There were 6 blackspots more than 40minutes away from the nearest hospital and all were in the rural areas. Significant disparities in spatial access to emergency medical care persist in the Ashanti Region, with rural areas experiencing substantially poorer access in terms of both distance and travel time. These findings underscore the need for targeted interventions to improve geographic accessibility and strengthen emergency response systems in underserved areas.

Assessing The Impact of Training Traditional Bonesetters in Northern Ghana: A Cross-Sectional Study

T. Yempabe, A. D. B. Buunaaim, P. Donkor, Y. Misbahu, A. Trompeter, C. Mock

ABSTRACT

Patronage of traditional bonesetters (TBSs) remains high in Africa, with frequent complications such as infections, gangrene, and amputations. We developed a course to promote safer fracture care among TBSs in Ghana. The effect of this course was evaluated by interviews with 35 TBSs in northern Ghana, who were among the first TBSs to be trained. Evaluations were performed June- November 2022, more than a year after the course. Interviews were supplemented with TBS worksite inspections. Many topics taught in the course had been incorporated into the TBSs' practices, including improved splinting techniques emphasizing splinting joints above and below the fracture (74.3% of TBSs reported this practice), avoiding tight bandaging (100%), using elevation (60.0%) and ice (57.1%) to decrease swelling and relieve pain, record keeping (94.3%), and basic rehabilitation measures such as early mobilization and joint movement (97.1%). Most reported having water (100%) and soap (97.1%) for handwashing. However, on inspection, only 60.0% of sites had water and 25.7% had soap at sites of patient care. None of 18 TBSs observed treating patients were wearing gloves. Contrary to course recommendations, most (82.9%) continued to treat at least some patients with open fractures and all continued use of black medicine (herbal concoction). The TBS course on safe fracture management led to improvements in several practices. Similar training should be considered for other countries with high TBS patronage. Areas for increased emphasis include hygiene (handwashing and gloves), referral of patients with open fractures, and avoidance of herbal concoctions.

Traditional Bonesetters in Northern Ghana: Opportunities for Engagement with the Formal Health Sector

T. Yempabe, A. Edusei, P. Donkor, A. Buunaaim, C. Mock

ABSTRACT

We sought to explore the knowledge and practices among traditional bonesetters (TBSs) in the Northern Region of Ghana and to assess opportunities for their engagement with the formal health sector. We identified 28 TBSs widely distributed in the Northern Region. They were interviewed using qualitative and quantitative methods, regarding their background, training, current practices, opinions regarding orthodox care, and interests in future linkages with the formal health sector. Most TBSs (67.9%) had no formal education and most (85.7%) learned their skills from older family members. Their treatments included reasonable versions of closed reduction and immobilization, but also use of locally-derived concoctions and spiritual aspects, such as incantations. Only 21.4% regularly referred complications to hospital. Nonetheless, all endorsed advantages to orthodox care, such as X-rays (100%), record keeping (100%), and pain management (85.7%). Almost all (96.4%) expressed an interest in training courses or other engagement with the formal health sector. Topics in which they were interested for training included record keeping (100%), pain management (85.7%), and management of open fractures and complications (82.1%). Factors making linkage between TBSs and the formal health sector difficult included low levels of formal education, training through secretive in-family methods, and spiritual and mystical aspects of their practice that might make communications about modern medicine difficult. Nonetheless, most indicated interest in linking with modern care, especially through training courses. Topics they suggested for such courses provide a foundation to build on in future efforts to engage TBSs with the formal health sector.

Factors Affecting Utilization of Traditional Bonesetters in the Northern Region of Ghana

T. Yempabe, A. Edusei, P. Donkor, A. Buunaaim, C. Mock

ABSTRACT

Traditional bonesetters (TBS) are still highly patronized by people with fractures in Africa. We sought to investigate factors affecting the utilization of TBS services in the Northern Region of Ghana. A mixed-methods study that combined both qualitative and quantitative

approaches was conducted among 64 TBS clients in the Northern Region of Ghana. Participants were purposively selected and should have utilized the services of TBSs at the time of the study. In addition, three focus group discussions (FGDs) were conducted to complement the quantitative results. Quantitative analysis was performed by calculating means and proportions. For the qualitative data, content analysis was done manually based on emerging themes in line with the study objectives. Sixty-four (64) clients were recruited. Twenty-four (37.5%) were female. The modal age group was 19–39 years. The educational status of the clients was dominated by primary/junior secondary education (39.1%), but included the full spectrum from no formal education / illiterate (26.6%) to tertiary (12.5%). Cheaper fees (26.3%), cultural beliefs (17.9%), and quick service (15.9%) were the main reason of patronizing TBSs. Twenty-two (34.3%) would have preferred orthodox care and the reasons cited included availability of X-rays (27.3%) and pain management (25.3%). These themes were reiterated by FGDs with an additional 30 clients. Additional themes identified by the FGDs included a belief that TBSs address both physical and spiritual aspects of the injury and the major role that families (not the injured person alone) make in deciding on type of treatment. Clients were supportive of orthodox providers linking with TBSs for activities such as training to improve pain control. TBSs have patronage from the full spectrum of society. The decision to opt for TBS treatment was influenced by cheaper fees, cultural belief, and quick service. TBS clients wanted greater linkages between TBSs and orthodox providers.

Factors Influencing Willingness to Intervene as Bystanders among Adult Residents Living in Crash-Prone Areas in the Ashanti Regionof Ghana

M. S. Duut

ABSTRACT

Formal prehospital emergency medical services cover only a small percent of the population in most low- and middle-income countries. Increasing the involvement of laypersons in prehospital first aid can be an important part of the response to injuries and other medical emergencies. We sought to understand factors associated with the willingness of laypersons in Ghana to provide first aid to road traffic crash victims. This cross-sectional study purposively sampled four crash-prone areas in the Ashanti Region and 385 participants were interviewed. A structured questionnaire was used to ask about their demographic characteristics, first aid knowledge, and perceptions about first aid. Factors affecting willingness to provide first aid were assessed using multivariable logistic regression. Most participants were male (57.7%) and young (median age 28 years). A large majority (82.9%) were willing to provide first aid to crash victims. However, only 43.1% had been trained in first aid and only 40.4% had adequate knowledge of first aid (≥ 70% correct). Factors associated with willingness

to provide first aid included first aid knowledge (aOR 17.27 for moderate knowledge vs. low knowledge, p=0.018; aOR 13.63 for adequate knowledge vs. low knowledge, p=0.030) and positive attitudes towards first aid, including the feeling that: every person should be trained in first aid (aOR 2.98, p=0.025), first aid increases survival (aOR 2.79, p=0.046), it is important to learn first aid (aOR 2.40, p=0.005), and bystanders have the responsibility to give first aid (aOR 4.34, p<0.001). A high percentage of people in these crash-prone areas of Ashanti Region, Ghana were willing to provide first aid. However, under half had been trained in first aid or had adequate knowledge of first aid. A major implication of these findings is the need to increase the availability of quality training in first aid in these areas.

Paediatric Road Traffic-Related TBI in Sub-Saharan Africa: A Meta-Analysis of Severity, Functional Outcomes, and Methodological Gaps

A. B. Appiah, M. MohammadNamdar, B. Bosompim, A. Alrawashdeh, M. L. Wilson, A. Deckert, P. Dambach, O. Horstick

ABSTRACT

Traumatic brain injury (TBI) is the most common injury suffered among children (0-18 years) with associated adverse complications resulting in acute and permanent disability and death. However, limited of epidemiological data has contributed to the ineffectiveness of pediatric-centred road safety policies and strategies Sub-Saharan Africa (SSA). This study comprehensively synthesised available data pediatric TBI severity and unfavourable outcomes from road traffic-crashes in SSA, and examined methodological limitations of studies. We systematically search electronic databases in English through PubMed/Medline, Web of Science, Embase, Cumulative Index to Nursing & Allied Health Literature (CINAHL), SafetyLit, and African Journals Online (AJOL). Two independent reviewers conducted initial screening, while three reviewers independently assessed quality (risk of bias) using the modified Newcastle-Ottawa Scale (NOS) and extracted data. The DerSimonian and Laird random-effects model (REM) was used to assess the pooled prevalence at 95% confidence interval. A subgroup and sensitivity analyses were performed. We further assessed the methodological gaps in studies included. Sixteen studies were included, with an estimated 2,683 participants. Male children were at higher risk of TBI than females. Nine (56%) of the included studies were conducted in West Africa, three (19%) in East Africa, and four (25%) in Southern Africa. The meta-analysis of eight studies and thirteen studies for TBI severity and unfavourable outcomes found a pooled prevalence of 28% (95% CI: 17%–46%) among 1,286 children and 25% (95% CI: 14%–43%) among 1,354 children, respectively. There was substantial heterogeneity across studies, with both pooled estimates showing I^2 =91.6% (p<0.001) and I^2 =92.3% (p<0.001), respectively. Common methodological

limitations were identified across the included studies, including heterogeneity in pediatric age definitions, reliance on short-term outcomes, single-centre design, limited external validity, and limited use of rigorous multivariable statistical modelling. Severe TBI and unfavourable outcomes were reported in 28% and 25%, respectively, with substantial heterogeneity across studies. Addressing methodological discrepancies is necessary, and scaling up research through multi-level and cross-country prospective studies will strengthen the evidence needed to guide pediatric-centred road safety policies and strategies.

Application of Negative Binomial Regression to Model Paediatric Road Traffic Injury Severity within a Haddon Matrix Framework

A. B. Appiah, V. Ativor, M. T. Morna, R. Baidoo, A. D. B. Buunaaim, M. Bukari, J. A. Alatiiga, C. Oppong, P. Donkor, C. Mock, P. Dambach, M. L. Wilson

ABSTRACT

Africa has a higher burden of road traffic deaths in the paediatric group than any other region. More than 65% of injuries and 20% of injury-related deaths occurred among paediatric patients in Ghana. This study developed an injury severity prediction model for paediatric road traffic injury (RTI) in Ghana. A cross-sectional study was conducted among 484 paediatric patients (aged 0-18 years) in three teaching hospitals in the Northern, Ashanti, and Central Regions of Ghana. The participant data were collected through questionnaires and reviews of medical records from September 2023 to September 2024. Study variables were organized into three domains of the Haddon Matrix (HM). Three negative binomial regression (NBR) prediction models were developed to examine the associations between potential predictors and injury severity score (ISS). The NBR models found the six statistically significant factors of ISS. Four factors were associated with increased injury severity: self-reported frequent alcohol use (β=1.54, p=0.016), harmattan weather condition (β=0.21, p=0.024), afternoon crashes (β=0.17, p=0.041), and referral cases (β=0.28, p=0.003). Only two were associated with decreased injury severity: single bicycle crashes (β=-1.58, p=0.011) and walk-in hospital visits (β=-1.09, p=0.026). The third model, with threshold P≤0.10, had the lowest Akaike Information Criterion and the highest log-likelihood, making it the best predictive model for paediatric RTI severity. Robust analytical tools and an appropriate framework are essential for understanding the complex interactions between predictors of paediatric RTI severity and informing local injury prevention strategies. Local injury prevention should target alcohol use, driving in harmattan weather conditions, prompt referrals, and enhanced pre-hospital care.

Distance to Diagnosis: Spatial Accessibility and Readiness of Imaging Services for Road Traffic Injuries in Ghana

A. Bart- Plange, B. Bour, A. Geletu, E. E. Kaufmann, E. Tiburu, C. Mock, P. Donkor

ABSTRACT

Diagnostic imaging technologies play a critical role in the understanding and management of road traffic crash (RTC) injuries by guiding accurate diagnosis and timely intervention. Despite their importance, there is limited evidence on their accessibility in relation to crash-prone areas. This study aimed to assess the spatial accessibility, availability, and functionality of four essential imaging modalities—ultrasound, plain X-ray, computed tomography (CT), and magnetic resonance imaging (MRI)—for RTC injury management in the Ashanti Region of Ghana. A cross-sectional quantitative study was conducted covering 38 public, private, and mission based hospitals, and 7 diagnostic centers. Data were collected with a structured questionnaire on equipment availability, functionality, and maintenance status. Spatial distance analyses between RTC blackspots and hospitals with imaging equipment were conducted using ArcGIS, and statistical comparisons were performed using Wilcoxon signed-rank tests. Descriptive comparative analyses were conducted to determine functionality and maintenance status of the modalities studied. A total of 3 MRI, 12 CT, 61 X-ray and 108 ultrasound machines were identified in the region, with only one MRI located in the public sector. While 60% of CT scanners were found in the private sector, majority of X-ray (59%) and ultrasound (62%) units were located in the public facilities. The mean travel distance from RTC blackspots to the nearest MRI, CT and X-ray facilities were 35.43km (±19.80km), 26.82km (±19.04km) and 8.68km (±5.15km) respectively. Non-functional MRI and X-ray units did not significantly affect travel distances; however, the presence of three non-functional CT scanners increased the average travel distance to CT services by 2.8 km ($p < 0.001$). In terms of technical capacity, in-house biomedical engineers demonstrated competency in maintaining X-ray and ultrasound equipment, but limited expertise was observed for CT and MRI systems. This study highlights significant disparities in access to diagnostic imaging services in the Ashanti Region of Ghana. While X-ray and ultrasound modalities are relatively well distributed across the region, access to CT and MRI remains limited, particularly in relation to road traffic crash-prone areas. The presence of non-functional CT scanners further exacerbates delays in accessing critical diagnostic services for trauma care. Strengthening maintenance systems, improving technical capacity for advanced imaging modalities, and prioritizing the repair of non-functional CT equipment in identified facilities are essential steps toward improving timely diagnosis and management of RTC-related injuries. This study provides critical evidence to inform targeted investments and policy decisions aimed at improving equitable access to life-saving diagnostic imaging services for road traffic injury management in Ghana.

Occupational Injuries among Road Construction Workers in Ghana: Burden, Mechanism and Severity

I. K. Yankson, A. K. Karikari, P. Okyere, A. Koranteng, A. K. Afukaar, E. Otupiri, P. Donkor, C. Mock, E. Owusu-Dabo

ABSTRACT

Road construction work involves diverse activities relying on the use of both skilled and unskilled manpower, posing serious risks to workers. This study sought to determine the burden, mechanism and severity of occupational injuries among road construction workers. The study design was institution-based descriptive cross-sectional using a questionnaire with closed- and open-ended questions. From Ashanti, Ahafo and Western North regions, 353 road workers reported on work-related injuries, types of injury, body parts injured, day(s) lost to activity and cause of injury from 27th January, 2020 to 4th March, 2020. The workers were primarily young (mean age 32.4 years) and male (97.7%). Most (70.2%) workers were contract/casual staff. Nearly 88% experienced injury the past year with 67.5% experiencing multiple injuries. The body parts most affected included waist/low back (29.9%), forearm/palm (18.9%), leg/foot (17.5%), chest (8.9%) and joints (7.1%). Mechanism of injury included slips/trips (18.5%), use of tools/equipment (13.8%) and overexertion during lifting (10.2%). For injury severity, 88.0% of workers had minor injuries, 8.8% moderate and 3.2% severe injuries. There is high burden of injury among road construction workers in Ghana. Most experienced injury during the past year, with over 4-in-5 having minor injuries. Leading mechanisms were slips/trips, use of tools/equipment and overexertion during lifting. Limitations include biases like memory decay, purposive selection of construction sites and driver over-representation. Hence, recommendations deriving from this study include enforcement of personal protective equipment use, proficiency training in use of tools/equipment and inter-lacing manual handling-related activities with activities that vary worker-postures.

Road Construction Injury Predictors, Rate, Recording and Safety Management Practices in Ghana

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ABSTRACT

This study determined the rate and predictors of road construction injury and injury recording practices in Ghana. Institution-based cross-sectional study was adopted, using closed- and open-ended questions. From 27th January 2020 to 4th March 2020, 353 employees from Ashanti, Ahafo and Western North regions provided information on work-related injuries, cause of injury and recording practices. Nearly 88% experienced minimum one injury the past year and 12-month injury prevalence was 872.5 per 1000 workers. Education (AOR=0.12; 95% CI, 0.02–0.61; p<0.001) influenced injury risk. Over 40% respondents said their firms recorded and investigated work-related injuries respectively. The 12-month injury prevalence was high. Education, work experience and employment status influenced injury occurrence. Ghana has safety guidelines for road construction but has weak enforcement. Therefore, safety improvement should include enforcing personal protective equipment use, proficiency training in equipment use and meticulous recording of injury incidents by firms.

Assessing the Factors Influencing Self-Ear Cleaning Practices and -Ear-Related Injuries among Student Nurses at the Nursing and Midwifery Training College, Kumasi

C. O. Agyemang Jnr.

ABSTRACT

Self-ear cleaning is a common self-care practice that can lead to ear injuries and complications. Despite their health training, nursing students often engage in unsafe ear cleaning due to misconceptions, habitual behaviours, and social norms. There is limited evidence regarding the prevalence, motivations, and effects of self-ear cleaning among trainee nurses in Ghana. This study examined factors influencing self-ear cleaning practices and related ear injuries among student nurses at the Nursing and Midwifery Training College, Kumasi. A cross-sectional study was conducted among 236 randomly selected second-year nursing students using a structured self-administered questionnaire. Data collected included self-ear-

cleaning behaviours, items used, motivations, and earwax-related symptoms. Descriptive statistics summarised practices, while chi-square tests and multivariate logistic regression identified predictors of self-ear cleaning at $p<0.05$, with adjusted odds ratios (AORs) and 95% confidence intervals. Of the participants, 69.2% reported practicing self-ear cleaning, mainly for hygiene and relief from itching. Cotton buds (83.1%) were the most common tool. Symptoms included itching (23%), ear pain (18.2%), discharge (6.1%), dizziness (4.1%), and ear injuries (81.8%). Over half viewed earwax as dirty, while 21.5% recognized its protective role. Logistic regression found no significant predictors of self-ear cleaning. Self-ear cleaning is highly prevalent among trainee nurses, driven more by misconceptions and habitual behaviour than by clinical judgment. While severe injuries were rare, minor complications were common. Educational interventions are needed in nursing training to promote safer ear-care practices and reduce preventable ear injuries.

Bullying against Student Nurses During Clinical Placement

S. Bayor

ABSTRACT

Clinical placements are pivotal to the professional development of student nurses, however, recent studies suggest that these settings are frequently characterized by bullying behaviors that negatively impact both learning and the overall well-being of students. This study sought to assess the bullying behaviors experienced by students, their coping strategies and mechanisms to end bullying during clinical placements. An exploratory study was conducted among student nurses using semi-structured interview guides. Individual interviews were conducted with a total of 30 students recruited purposively. The sample size was determined after data saturation was achieved. Interviews were tape-recorded, transcribed verbatim and analyzed using thematic analysis. The study reported that, nursing students experienced various forms of bullying including hierarchical power abuse, retaliatory punishments, verbal violence and undermining of professional competence. Students adopted various coping strategies including support from peers; however, they were unable to report bullying due fear of victimization. Some measures proposed by the study to eliminate bullying include providing anonymous reporting system for students, sensitization of health workers and frequent supervision. Bullying against student nurses is prevalent in clinical settings and greatly affects their professional competencies. The study recommends the immediate implementation of measures by stakeholders to create a friendly working environment that enhance student professional development.

From Bar to Road: Alcohol-Impaired Mobility and Road Safety in Ghana

J. Damsere-Derry

ABSTRACT

Impaired road use remains a critical yet under-addressed public health challenge in Ghana, with substantial implications for road traffic injuries and fatalities. This presentation integrates epidemiological evidence from roadside surveys, behavioural studies, and a novel investigation of blood alcohol concentrations (BACs) among bar patrons to provide a comprehensive assessment of alcohol-impaired road use. Findings indicate that approximately 8.7% of drivers have detectable alcohol levels, with 5.5% exceeding the legal BAC limit of 0.08%. Complementary evidence from bar-based research shows that alcohol consumption levels are substantially higher in real-world drinking environments, with a mean BAC of 0.143% and over 60% of patrons exceeding the legal limit, many reaching levels above 0.150%. Risky post-drinking mobility behaviours are widespread as 96% of bar patrons reported walking, riding, or driving after alcohol consumption, with motorcycles being the dominant mode of transport. High BAC levels are strongly associated with crash involvement, with patterns indicating increasing crash risk at higher BAC categories. Knowledge gaps further exacerbate the problem, as a significant proportion of road users lack awareness of legal BAC limits and safe drinking thresholds. The convergence of high alcohol consumption, risky mobility patterns, and weak enforcement underscores a major systemic road safety risk. This talk argues for a strengthened Safe System response, including enhanced enforcement of BAC laws, introduction of context-specific alcohol consumption guidelines, and targeted public education. Addressing drink-driving in Ghana requires integrating behavioural, enforcement, and policy interventions to reduce alcohol-related mobility and achieve sustainable road safety outcomes.

Epidemiological Features and Outcomes of Auto-Tricycle Related Injuries in Kumasi

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ABSTRACT

Auto-tricycles, commonly known in Ghana as 'Pragya' or 'Aboboyaa,' have gradually become a major form of transportation for goods and people within various cities and towns, with an attendant surge in accident-related injuries and fatalities in Ghana. This

study explored the epidemiological characteristics and consequences of injuries sustained by auto-tricycle occupants in the Greater Kumasi Metropolis. A retrospective cross-sectional study was conducted at the Emergency Medicine Directorate of the Komfo Anokye Teaching Hospital, Kumasi. A purposive sampling method was employed to extract data on occupants involved in auto-tricycle crashes from 1st January 2019 to 31st December 2022. Survivors identified during the study were contacted to track their recovery. Data were extracted from a primary source using a structured data abstraction guide. STATA version 17.0 was used for data analysis. 34.21% incidence rate of auto-tricycle injuries in the Ashanti Region occurred within the Greater Kumasi metropolis. 389 patient records were extracted, primarily males (87.15%), with a mean age of 29 years. The most common injury mechanism was auto-tricycle vs. vehicle (35.48%), followed by single auto-tricycle accidents like auto-tricycle falling off or crashing into an object other than a vehicle, auto-tricycle, or motorcycle (35.22%), and auto-tricycle vs. motorcycle (25.19%), respectively. Head injuries (37.02%) and lower extremity injuries (34.71%) were predominant. Nhyiaeso Sub-Metro had the highest rate of auto-tricycle crashes (18.51%), followed by Old Tafo Municipal (17.22%) and Kwadaso Municipal (13.62%), respectively. Injury severity was mostly moderate (61.70%). The type of injury had an influence on the injury severity (p=0.001). Age and injury severity were associated with injury outcomes. There were 11 in-hospital deaths, and 13 deaths occurred post-discharge. About 44.62 % of patients either had a delayed recovery or had not fully recovered. The burden of auto-tricycle accidents was 3.04 DALYs. Overall, auto-tricycle-related injuries led to consequential outcomes in occupants. Targeted actions are needed to prioritise road safety programs and injury prevention campaigns, especially targeting high-risk groups such as young male adults and the elderly. There should also be a strategic agenda to scale up rehabilitation, physiotherapy, and orthopaedic care to reduce long-term disability and improve recovery outcomes

Influence of Helmet Use on the Severity of Motorcycle-Related Maxillofacial Injuries Presenting to the 37 Military Hospital, Ghana

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ABSTRACT

Motorcycle-related road traffic crashes have been on the ascendency in developing countries like Ghana. The resultant high mortality, functional impairment, and high cost of treatment pose a significant public health burden. The safety helmet is an essential protective gear for motorcyclists as it reduces the incidence of intracranial injuries, cervical spine injuries, and maxillofacial injuries. This study aimed to determine the influence of helmet use on the

severity of maxillofacial injuries. The research was a prospective cross-sectional evaluation of patients presenting to the 37 Military Hospital, Ghana with motorcycle crash-related maxillofacial injuries from 1st October 2019 to 30th September 2020. A pre-designed data collection form was used to assess the use of helmets, type of helmet, fastening status of the helmets and the severity of maxillofacial injuries, among others. A total of 148 participants made up of 142 males and 6 females were included in the study. Forty-eight percent of the motorcyclists were wearing helmets at the time of the collision. The three-quarter helmet design was commonly used (55%) with 71% of helmeted motorcyclists having a fastened helmet. There was a significant association (p- 0.0141) between wearing of helmet and severity of injury. There were differences in the severity of injury among riders wearing different types of helmets and between fastened and unfastened helmet wearers, but this was not statistically significant. There is a significant association between the use of helmets and the severity of maxillofacial injuries. The nature of maxillofacial injuries sustained in a motorcycle crash is influenced by the type of helmet and fastening status.

Patterns of Injury and Contributing Factors among Street Hawkers in Kumasi: A Qualitative Study

E. A. Boateng-Osei

ABSTRACT

Street hawking is a prevalent form of informal economic activity in urban Ghana, exposing workers to significant occupational injury risks in high-traffic environments. Even though there is evidence that a substantial proportion of street hawkers sustain work-related injuries, there is limited qualitative understanding of the types of injuries they experience and the factors that contribute to their occurrence, particularly within the Ghanaian context. This study sought to explore the patterns of injury and their contributing factors among street hawkers in Kumasi, Ghana. A qualitative study using a descriptive phenomenological design was conducted with 13 injured street hawkers operating in high-traffic hotspots within the Kumasi Metropolitan Area and Oforikrom Municipal Area. Participants were recruited through purposive and snowball sampling. Data were collected using semi-structured, in-depth interviews conducted in English or Twi and were audio-recorded and transcribed verbatim. Translated transcripts were cross-checked for accuracy. Data were analyzed using thematic analysis, and trustworthiness was ensured through prolonged engagement, member checking, independent dual coding, reflexivity, and audit trail documentation. The themes that emerged regarding the types of injury and their causes have been grouped into two. The first theme, Pattern of injury, revealed that participants sustained a range of injuries, including traumatic injuries from vehicle collisions such as chest trauma, open head wounds, lacerations, and near-amputations, as well as persistent musculoskeletal complaints, including chronic back pain, joint injuries, and kneecap displacement. Multiple-victim incidents,

in which a single vehicular event simultaneously injured several hawkers occupying the same roadside space, were also documented. The second theme, Determinants of Injuries, identified three sub-themes: Vehicle-related causes, including brake failure, speeding, and reckless driving by motorists and motorcyclists; Environmental and infrastructure hazards, including dangerous road structures and the structural absence of designated trading spaces that compelled hawkers to operate within active traffic; and Work-related risk factors, which encompassed the time pressures of conducting transactions in moving traffic and physical assaults experienced during municipal enforcement operations. Street hawkers in Kumasi bear a substantial burden of both acute and chronic occupational injuries driven by vehicular, environmental, and institutional factors. The findings underline that injury risk among this population is not incidental but is deeply embedded in structural conditions, including the absence of formal vending infrastructure and inadequate road safety enforcement. Targeted interventions, including designated trading spaces, physical improvements at known injury hotspots, stricter enforcement of vehicle roadworthiness, and regulated conduct of market clearance operations, are urgently needed to protect this vulnerable workforce.

A Decade of Vulnerability: Injury Severity Patterns, Determinants, and Fatality Risk Among Vulnerable Road Users in the Greater Kumasi Metropolitan Area, Ghana (2015–2024)

J. A. Forkuo, E. K. Debrah

ABSTRACT

Road traffic injuries remain a leading cause of death and disability in Ghana, with vulnerable road users (VRUs); pedestrians, motorcyclists, cyclists, and tricyclists, disproportionately affected. However, empirical evidence on the determinants of VRU injury severity in Ghanaian metropolitan areas remains limited, constraining the development of evidence-based prevention strategies. This study aimed to quantify injury severity patterns and identify key determinants of fatal outcomes among vulnerable road users in the Greater Kumasi Metropolitan Area. A retrospective analysis of 23,147 casualty records from the Building and Road Research Institute (BRRI) national crash database was conducted. VRU casualties (n = 5,819; 25.1%) were identified using vehicle type and casualty class fields from the standardised BRRI Road Accident Report Form. Bivariate associations were assessed using chi-square tests with Cramer's V effect sizes. An ordinal logistic regression (proportional odds model) was fitted as the primary analytical framework, with a binary logistic regression estimated as a robustness check to facilitate comparison with previous studies. Risk ratios with 95% confidence intervals quantified the relative fatality risk of VRUs compared to non-VRUs. Results indicated that VRUs experienced significantly

higher fatality rates than non-VRUs (13.7% vs. 4.2%; $p < 0.001$). Pedestrians exhibited the highest fatality risk (RR = 4.14; 95% CI: 3.62–4.73), followed by motorcyclists (RR = 2.26; 95% CI: 1.89–2.71). Although point estimates suggested elevated risks for cyclists and tricyclists, these associations were not statistically significant. Night-time conditions without street lighting, head-on collisions, and older age (60+) were significant predictors of more severe injury outcomes across all models. Male VRUs constituted 69.6% of casualties, with a mean age of 32.1 years (SD = 16.0). Over the decade, absolute VRU casualty counts rose from 442 to 766, although the VRU share of total casualties declined from 30.5% to 25.3%, reflecting faster growth in motorised vehicle crashes. Neither the VRU fatality rate nor the KSI (killed or seriously injured) proportion showed a statistically significant trend over the period. These findings demonstrate that VRUs in Greater Kumasi face markedly elevated fatality risk, with pedestrians and motorcyclists most vulnerable. The findings support targeted interventions including pedestrian infrastructure improvements, helmet enforcement, and improved street lighting, alongside age-specific safety interventions, directly informing local injury prevention policy in the Greater Kumasi Metropolitan Area.

Structure, Process, and Challenges in the Referral System for Trauma-Related Emergencies in the Ashanti Region of Ghana

K. Donkor

ABSTRACT

Trauma referrals (transfers) are often problematic in low- and middle-income countries. We sought to better understand the structures and processes for trauma referrals at first-level hospitals in Ashanti Region, Ghana, as well as challenges faced during referrals. We hoped to identify opportunities to strengthen the referral system. This study employed a quantitative, cross-sectional design. Health care workers (doctors, nurses, physician assistants) in emergency units of 15 first-level hospitals were randomly selected and interviewed using a structured questionnaire. Data were gathered on structures (including policies), processes, and challenges related to trauma referrals. We interviewed 256 health workers. Most (94.9%) indicated referrals were sent to the main tertiary hospital in the area, with lesser numbers reporting transfers to second-level (36.7%) or other hospitals (12.5%) (more than one response possible). There were considerable delays, with many respondents (44.5%) indicating that the average time before referral hospitals accepted patients was more than 3 hours. Delays were due to unwillingness of referral hospitals to accept patients primarily due to lack of beds (97.7%) or oxygen (46.9%). Other challenges included lack of patient funds to pay for transportation (66.0%) and need to settle hospital bills before transfer (78.1%). Several communications issues were reported, including non-

responses from referral hospitals (62.1%) and being unable to reach the ambulance service (46.5%). Feedback on referrals was low (36.7%). There were prolonged delays in trauma transfers. Challenges included capacity at referral hospitals, finances, and communications. Long-term solutions include increasing capacity of both first-level facilities (to reduce need for referrals) and higher-level facilities (to be better able to receive referrals). Feasible shorter-term solutions include improving communications and overall organization for referrals. Establishment of a call center could assist with communications and also with decisions as to which hospital can best handle a given patient and has beds available.

Differences in Quality Indicators of Emergency Care Between On- and Off-Hours at Ghanaian District Hospitals

P. K. Forson

ABSTRACT

The quality of off-hours care (nights and weekends) for many emergency conditions frequently proves inadequate. Most studies on this topic are from high-income countries. We sought to address this gap by assessing differences in quality indicators of emergency care between on- and off-hours at two district hospitals. In this prospective cohort study conducted from June 2021 to May 2023, patients presenting to the emergency unit between 8 AM and 8 PM on weekdays were categorized as presenting during on-hours. Those presenting between 8 PM and 8 AM or anytime on weekends were considered as off-hours. The completion of 16 quality indicators was compared between patients who received care during on- and off-hours. Data were gathered on 7,831 patients: 5,019 (64.1%) presenting during on-hours and 2,812 (35.9%) during off-hours. The overall achievement of quality indicators ranged from 27.1% (recording GCS) to 98.3% (documentation of diagnosis). Twelve indicators were performed in less than 80% of patients. Four indicators were performed more often during on-hours: primary survey for trauma patients; blood glucose; documentation of diagnosis; and GCS. Four indicators were performed more often during off-hours: anti-tetanus treatment for adults with open wounds; splinting of long-bone fractures; analgesics given to patients reporting pain; and recording of complete initial vital signs. Although there were significant differences in eight indicators, differences were small (<10%). One indicator (splinting of long-bone fractures) was performed greater than 10% more often during one period: off-hours (68.2%) vs. on-hours (50.0%; p=0.043). There were limited differences in performance of quality indicators between on- and off-hours, indicating a general consistency of quality of care across daily and weekly cycles. However, most indicators were performed in less than 80% of patients. District hospitals in Ghana must closely monitor quality indicators to standardise and improve emergency care across all hours.

Right Patient, Right Hospital, Right Time: Optimizing Emergency Routing for Road Traffic Injuries in Ghana

A. Bart-Plange, A. Geletu, E. E. Kaufmann, E. Tiburu, C. Mock, P. Donkor

ABSTRACT

Road traffic crashes (RTCs) are a leading cause of death globally, particularly among young populations. While prevention remains critical, effective post-crash response systems are essential to improving survival outcomes. In Ghana, the National Ambulance Service (NAS) provides prehospital care but lacks a formal, data-driven system for selecting the most appropriate destination hospitals, relying instead on anecdotal information. This often results in suboptimal patient routing and delays in definitive care. The aim of this study was to design a formal decision-support tool for selecting suitable destination hospitals to transport RTC victims to base on their injury severity and availability of resources for effective diagnosis. This study developed and validated a mathematical optimization model to support decision-making in the selection of destination hospitals for RTC victims. Using geospatial data on crash blackspots and facility-level data on diagnostic imaging availability, a diagnostic readiness score (DRS) was computed for each hospital. The model optimized patient routing based on injury severity, proximity, and facility capability, and was solved using the Gurobi optimizer. The model achieved an overall accuracy of 92.95%, with 100% of minor injuries, and 89.42% of both moderate and severe injuries appropriately assigned to facilities with the required imaging capacity. Validation by an expert panel showed a 94.44% agreement with model recommendations. The findings demonstrate that aligning emergency medical service routing with real-time facility readiness can significantly improve access to appropriate care. Integrating such optimization-based decision-support tools into NAS operations has the potential to enhance system responsiveness, reduce delays to definitive care, and improve trauma outcomes in Ghana.

Integrated Health System Preparedness for Road Traffic Trauma Care in Ghana: Evidence from a Multi-Region Cross-Sectional Assessment

J. Amissah, E. K. Nakua, P. Okyere, P. Donkor, C. Mock

ABSTRACT

Road traffic injuries constitute a major component of the non-communicable disease burden in sub-Saharan Africa. In Ghana, the mortality rate of 24.3 per 100,000 population exceeds the global average of 15.0 per 100,000, with 2,756 fatalities recorded in 2023. Strengthening integrated health systems, including workforce capacity, infrastructure, and evidence-informed protocols, is critical to improving trauma outcomes. Although organized trauma care systems can reduce mortality by 15–25%, the extent to which Ghana's health facilities are prepared to deliver effective trauma care remains insufficiently characterized. This study assessed emergency trauma care preparedness and its determinants across six regions of Ghana to inform integrated health system strengthening, workforce development, and policy response. A facility-based cross-sectional study was conducted across 52 health facilities in six administrative regions (Ashanti, Bono East, Central, Eastern, Savannah, and Western). Facilities were purposively selected based on proximity to accident black spots, functional capacity, and facility type. Data were collected using adapted WHO Essential Trauma Care (ETC) guidelines and the International Assessment of Capacity for Trauma (INTACT) tool. An Emergency Preparedness Index (EPI) was constructed across four domains: Human Resources (30%), Infrastructure and Facilities (25%), Equipment and Supplies (25%), and Procedures and Protocols (20%), reflecting key components of an integrated trauma care system. Descriptive statistics, Kruskal-Wallis tests, and hierarchical multivariable regression were employed. The overall mean EPI was 64.5 ± 11.3, with no significant regional variation (p=0.33), although the Savannah region recorded the highest mean (73.3 ± 12.6) and the Western the lowest (59.6 ± 12.0). Equipment and Supplies demonstrated the highest domain score (82.0 ± 15.0), while Human Resources remained the most critical gap (49.7 ± 15.2). Significant variation in procedural capacity (p=0.013) and marked disparities across facility levels (teaching hospitals scored 91.6 ± 0.1, regional hospitals 73.9 ± 4.3, district hospitals 64.7 ± 10.4, and other facilities 60.2 ± 8.9), highlighting fragmentation in service delivery and uneven system readiness. The final regression model accounted for 97 percent of EPI variance (R^2=0.970, p<0.001), and the key predictors of preparedness were 24-hour service availability (+12.35 points), circulation equipment adequacy (+8.18 points), and training adequacy (+3.54 points), underscoring the importance of continuous workforce education in improving trauma care outcomes. Emergency preparedness for road traffic trauma care in Ghana remains below international benchmarks, with critical gaps in human resources and service continuity. The observed disparities across facility levels indicate the need for a more integrated and coordinated trauma care system, particularly at the district level, where most patients first access care. There is a need for targeted investments in workforce training to enhance system performance in delivering road traffic trauma within Ghana's broader non-communicable disease response.

Reporting on Road Traffic Injury: Content Analysis of Injuries and Prevention Opportunities in Ghanaian Newspapers

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ABSTRACT

Motorisation has enhanced the lives of many individuals and societies but the benefits have come with a price. Road traffic injuries and deaths, most often remain almost invisible to society at large; tragic to those involved but not newsworthy. This study sought to analyse road traffic injury reporting in Ghanaian newspapers and identify opportunities for improving road safety. The content of 240 articles on road traffic injury was reviewed from 2005 to 2006 editions of two state-owned and two privately owned newspapers. The articles comprised reports on vehicle crashes (37%), commentaries (33%), informational pieces (12%), reports on pedestrian injury (10%) and editorials (8%). It was found that article source did not influence type-of-article regarding public specific safety actions (χ^2=4.18; p=0.12), number injured (χ^2=1.56; p=0.21), government specific safety actions (χ^2=0.42; p= 0.81) and date of crash (χ^2=0.71; p=0.40). However, there is significant difference between public and private newspapers regarding pre-hospital deaths (χ^2=10.46; p=0.01). There was little coverage of pedestrian injuries, which account for half of the traffic fatalities in Ghana, but only 22% of newspaper reports was found. Only two articles reported on seatbelt use. Reporting patterns were similar between public and private papers, but private papers more commonly recommended government action (50%) than did public papers (32%, p=0.006). It is concluded that Ghanaian papers provide detailed coverage of traffic injury. Areas for improvement include pedestrian injury and attention to preventable risk factors such as road risk factors, seatbelt use, speed control, and alcohol use.

Temporality and Timing of Motorcycle Injuries, Characteristics and Patterns in Ghana

A. Koranteng

ABSTRACT

Understanding the temporal patterns and admission durations of RTC victims is essential for healthcare planning and road safety monitoring. The study utilized a spatio-temporal approach to analyse 384 crash victims admitted between January 2021 and December

2022. Admission duration and seasonal trends were recorded. The median duration of hospital admission was 3 days (IQR: 2–4 days). Longer stays (> 5 days) were associated with a 3.44 times higher odds of low GCS scores. Seasonally, admissions peaked in March (14.0%) and reached their lowest point in September (5.5%). Festive months (such as Eid-Fitr and Easter) accounted for 31% of total cases. Interestingly, crashes during these festive periods were associated with 84% lower odds (AOR: 0.16) of resulting in a low GCS score compared to non-festive months. While 98.7% of patients were discharged, 21% were discharged against medical advice (DAMA). Crash injuries exhibit clear seasonal variations, with peak hospital burden occurring in early spring. The high rate of DAMA suggests that financial or social factors may interrupt the necessary duration of clinical care.

Human Health Risks of Particulate Matter Pollution During Road Construction-Related Activities in Ghana

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ABSTRACT

Road construction involves several activities emitting pollutants, including particulate matter, harmful to human health. This is minimally studied in Africa. The study determined and compared particulate matter ($PM_{1.0}$, $PM_{2.5}$ and PM_{10}) levels and air quality index (AQI) at unpaved roads, asphalt overlay, chip-sealed and asphalt-producing sites in Ghana. It also determined human health risks associated with exposure to pollutants. Methods: It took place in the Ashanti and Ahafo Regions of Ghana, was exploratory and cross-sectional using the air quality detector, PCE-RCM 16. Data collection took place, January-May, 2020. Sites for asphalt production, asphalt overlay, chip-sealed and unpaved roads recorded mean PM_{10} readings of 12.7-fold, 7.4-fold, 6.1-fold and 2.6-fold respectively of the 2021 WHO air quality guideline (AQG) limit, 45μgm^{-3}. Similarly, the mean $PM_{2.5}$ values were approximately 30.4-fold, 17.2-fold, 14.1-fold and 6.1-fold of the AQG limit, 15μgm^{-3} respectively. Also, the mean $PM_{1.0}$ values were very high and of grave concern. Comparing the study-site categories, using the AQI, the asphalt-producing and asphalt overlay sites were both "hazardous", chip-sealed site was "very unhealthy" and unpaved sites, "unhealthy for sensitive groups". Type of activity influenced pollution levels ($p<0.01$). All study sites were polluted above WHO limits. It is recommended that managers of road construction firms should ensure that sources of dust, fumes and other particulates are either eliminated or levels reduced by engineering methods. Personal protective equipment wearing should be enforced and officers of government agencies ensure strict adherence to WHO AQG and apply appropriate sanctions to offending firms and workers.

On-Site Personal Protective Equipment Signage and Use by Road Construction Workers in Ghana: A Comparative Study of Foreign and Locally-Owned Companies

I. K. Yankson, N. K. NsiahAchampong, P. Okyere, F. Afukaar, E. Otupiri, P. Donkor, C. Mock, E. OwusuDabo

ABSTRACT

Road construction work has specific risks and safety issues which have not been adequately addressed in most low- and middle-income countries, especially Africa. The objective of this study was to determine the prevalence of personal protective equipment (PPE) use during road construction activities by workers in foreign- owned against locally-owned road construction companies in Ghana. An institution-based cross-sectional survey was undertaken during January – March, 2020 to study 389 road construction workers who were actively working on site. They were unobtrusively observed to capture whether they wore the appropriate PPE at the time of the survey. The PPE of interest were: hard hat, goggles, shoes, nose masks, hearing protection, gloves and reflective vests/apparel. On-site posted PPE signage was also checked. Majority of workers were males (96.9%) and labourers (53.5%). Similar numbers of workers in locally-owned (195) and foreign-owned (194) companies were studied. Use of PPE varied considerably by type: shoes (78.7%), reflective vest (44.5%), gloves (30.6%), hard hat (27.0%), nose mask (17.2%), goggles (11.3%) and hearing protection (10.8%). For all types of PPE, use was higher for workers in foreign-owned companies compared with locally-owned companies: goggles (Odds ratio [OR] 55.2), hearing protection (OR 52.0), gloves (OR 23.7), hard hat (OR 20.2), nose mask (OR 17.8), reflective vest (OR 5.3) and shoes (OR 4.1), ($p<0.001$ for all ORs). No site had any signage to promote PPE use. Majority of workers used shoes. Less than half of workers used other types of PPE and use of some types (goggles and hearing protection) was minimal. Workers in foreign-owned companies were significantly more likely to use all the seven types of PPE than locally-owned companies. Although there is still room for improvement in foreign-owned companies, locally-owned companies should be able to attain similar PPE use to that in foreign-owned companies. Necessary PPE should be provided and site supervisors should encourage workers to wear PPE when on site.

Occupational Injuries Among Healthcare Workers at a Public Hospital in Ghana

H. S. Appiagyei, E. K. Nakua, P. Donkor, C. Mock

ABSTRACT

Information on occupational injuries to health care workers (HCWs) in Africa is limited. We sought to determine the prevalence of occupational injuries among HCWs at a Ghanaian hospital, determine the most common types of injuries, and assess HCWs' knowledge regarding occupational safety. We interviewed 246HCWs at a government hospital regarding occupational injuries during the prior year. The sample included: nurses (77.6%), physicians (9.3%), laboratory staff (5.7%), and non-clinical staff (6.9%). The 12-month prevalence of occupational injury was 29.7%. Incidence was 1.63 injuries per person-year. Leading mechanisms were needlesticks (35.4% of injuries), cuts from sharp objects (34.6%), hit by object (25.2%), and violence (24.4%). Most (62.2%) respondents had training in occupational safety. Most reported adherence to safety practices, including properly disposing sharps (86.6%) and using personal protective equipment (85.8%). However, there were gaps in knowledge. Few HCWs knew the officer in-charge for post-exposure prophylaxis (5.3%) or that there was a hospital occupational safety unit (26.4%). Many (20.8%) reported difficulty in seeking care for their injury. On multivariable analysis, correlates of injury included stress at work (aOR 2.68; 95% CI 1.26, 5.71) and being a laboratory worker (aOR 3.26; 95% CI 1.02, 10.50). Occupational injuries to HCWs were unacceptably frequent. There is, however, a solid foundation to build on. Most HCWs had training in occupational safety and many reported adherences to safety practices. Healthcare workers need to be better informed of existing resources. Care for injuries needs to be improved, such as by increasing capacity for post-exposure prophylaxis.

Balancing Care and Pressure: Occupational Injuries, Mental Workload, and Coping among the Nursing Workforce in Eastern Ghana

C. A. Poku

ABSTRACT

The nursing profession plays a crucial role in the quality of healthcare services. While nurses face occupational injury challenges globally, mental workload, which is often overlooked, plays a significant role in these injuries. Understanding nurses' coping

strategies can help develop effective interventions. The study examined the influence of mental workload on occupational injuries and on nurses' coping strategies. A multi-centre cross-sectional study was conducted in selected hospitals in the Eastern Region of Ghana. Using a stratified sampling technique, 317 nursing staff from 6 hospitals participated in the study. A researcher-developed occupational injury questionnaire, the NASA Task Load Index, and the Brief COPE scale were used to measure occupational injury, mental workload, and coping strategies among nurses. Descriptive statistics, Pearson moment-product correlations, and regression analysis were used to analyse the data at the 0.05 significance level. Participants reported needle pricks, injuries from sharps, exposure to blood and other body fluids, and back pain and injury from patient-handling tasks in the past year. The study also revealed a high level of mental workload among participants. A significant correlation was observed between mental workload and various occupational injuries. The participants adopted different coping strategies in dealing with the mental workload, with active coping and instrumental support being the most used coping strategies. The findings underscore the importance of addressing mental workload in nursing to reduce occupational injuries. To achieve this, nurses must be provided with appropriate coping strategies and support to minimise mental stress. Providing accessible and effective coping strategies tailored to nurses' needs can significantly improve their well-being and job performance. Healthcare administrators and policymakers should consider these results when designing interventions to support the nursing workforce.

Prehospital and Emergency Nursing Response to Injuries in Ghana: A Scoping Review of Capacity, Gaps and Opportunities

H. Yawson

ABSTRACT

Injuries remain a major public health challenge in Ghana, disproportionately affecting young and economically active populations. Globally, injuries account for over 4.4 million deaths annually, nearly 8% of all deaths, with low- and middle-income countries bearing the greatest burden (World Health Organisation, 2024). In Ghana, road traffic injuries alone result in over 2,000 deaths each year, alongside substantial disability and economic loss (National Road Safety Authority, 2022). Prehospital and emergency nursing systems are critical in mitigating these outcomes. The establishment of the National Ambulance Service has strengthened emergency response capacity; however, disparities in access, workforce specialisation, and system coordination persist. This scoping review synthesises Ghana-specific evidence on capacity, systemic gaps, and opportunities, contributing to the conference theme by highlighting actionable strategies grounded in local research. This

review followed the PRISMA-ScR framework (Tricco et al., 2018). Literature was sourced from PubMed, Scopus, Web of Science, and Google Scholar (2000–2024), complemented by grey literature from the Ghana Health Service. Inclusion criteria covered studies on injury care, prehospital systems, and emergency nursing in Ghana. Twenty-eight studies met the inclusion criteria and were analysed thematically under capacity, gaps, and opportunities. The evidence from the analyses is presented in themes. This reflects the focus of this study. Specifically, the findings are presented based on the theme of capacity, gaps, and opportunities. Capacity: Ghana has made notable progress in prehospital care through the expansion of the National Ambulance Service, improving patient transport and response coordination (Stewart et al., 2015). Emergency nursing capacity has also improved through targeted training programs and the adoption of triage systems in tertiary facilities (Martel, et al., 2014; Karikari et la., 2025). These developments have enhanced trauma response, particularly in urban settings. Gaps: Despite progress, critical challenges remain. There is a shortage of specialised emergency nurses, with limited access to advanced trauma training (Stewart et al., 2015). Prehospital coverage is uneven, with delayed response times in rural areas. Infrastructure constraints, including inadequate equipment and supplies, further limit effective care. Weak integration between prehospital and hospital systems disrupts continuity of care, while poor injury data systems constrain evidence-based planning: Opportunities: Key opportunities include expanding emergency nursing specialisation, strengthening ambulance coverage, and integrating community-based first responders. Continuous professional development, including simulation-based trauma training, can improve clinical outcomes. Enhancing coordination between the National Ambulance Service and hospital emergency units, alongside developing national injury surveillance systems, will support more effective and data-driven interventions. While Ghana has made meaningful strides in prehospital and emergency nursing responses to injuries, persistent gaps in workforce capacity, infrastructure, and system integration limit optimal outcomes. Addressing these challenges requires coordinated investments in training, service delivery, and data systems. Harnessing local evidence is essential to designing context-specific interventions that can significantly reduce injury-related morbidity and mortality in Ghana.

Experiences of Caregivers of Patients with Alzheimer's and Related Dementia (ADRD) in Ghana: A Qualitative Exploratory Study

P. Okyere, A. Singh, E. Appiah-Brempong, B. A. Barnie, C. Mock, P. Donkor

ABSTRACT

Dementia is a growing concern for low- and middle-income countries (LMICs). It is estimated that by 2050, sub-Saharan Africa (SSA) will be having close to 7.62 million

people living with dementia. The objectives of the study were to explore the experiences of caregivers of patients with ADRD and identify the support systems available to them. The study employed an exploratory qualitative design to investigate the experiences of caregivers of patients living with ADRD. Participants were recruited from the Neurological unit of the Korle-bu Teaching Hospital, Accra -Ghana. Individual face to face interviews were held with caregivers of patients with ADRD between June and July 2021. Subsequently the data were analysed thematically following Braun and Clark's approach. Twenty-five (25) caregivers of ADRD patients participated in this study: Four (4) major themes were derived from the transcripts: (1) *Caregiving responsibilities and daily routines*, which described the physical and practical help caregivers provided to their loved ones to enable them get through the day; (2) *emotional and psychological burden*, which described the emotional and psychological strain such as feelings of stress and frustration caregivers experienced as they cared for their loved one with; (3) *Social support systems*, which described the network of support available to the caregivers including those from family members, hired help, health providers and the larger community; and (4) *impact of COVID-19 on caregiving*, which described how the COVID-19 pandemic affected caregiving routines, responsibilities and the overall well-being of caregivers and their loved ones. The study revealed the practical, emotional and psychological burden caregivers experienced in caring for their loved one with ADRD. Participants navigated these challenges through a sense of love, familial duty, reciprocity and reliance on faith and prayer. Our study emphasises that supporting caregivers of ADRD patients requires interventions that address not only the emotional and psychological burden associated with caring for dementia patients but structural deficiencies in informal and formal support systems including access to professional care.

The Domestic Danger Zone: Identifying Modifiable Risk Factors for Unintentional Injuries Among Children Under Five in Damongo, Ghana.

P. Anwuli

ABSTRACT

Unintentional injuries (UI) in children under five represent a critical yet under-addressed global public health crisis, contributing to long-term disability, financial strain, and childhood mortality. Despite the severity of the issue, localized data on specific risk correlates in the Savanna Region of Ghana remains sparse, hindering the development of targeted preventative interventions. This study employed a Cross-sectional design in Damongo, Ghana. Researchers utilized cluster and convenience sampling to recruit 110 parents/guardians for a household-based survey. Data were collected via structured questionnaires and analyzed using Stata version 14, utilizing multivariable regression,

bivariate logistic regression, and Chi-square tests to identify significant sociodemographic and environmental risk factors. Prevalence & Mechanism: The prevalence of UI was high at 51.9% (95% CI: 42.3–61.0), with falls, burns, and poisoning identified as the primary mechanisms. Notably, 42.1% of injuries occurred within the home. Maternal & Household Predictors: Mothers aged 40 and over were 8.69 times more likely to have a child sustain a UI (p=0.010). Counter-intuitively, any level of maternal education (basic, secondary, or tertiary) was associated with higher injury odds (7.32, 3.88, and 5.16 times) compared to no education. Increased household size and having three or more children were also significant correlates ($p < 0.05$). Child & Environmental Factors: The risk increased significantly with age; children aged 37–59 months were 6 times more likely to experience UI than infants (p=0.014). Environmental hazards, specifically open drains (AOR=4.31) and the presence of domestic animals (AOR=4.08), were strong predictors of injury. Socioeconomics: Chi-square analysis confirmed a significant association between family income levels and UI frequency (p=0.012). The study concluded that the majority of risk factors for childhood UI in this region are modifiable. These findings suggest that public health strategies should shift toward household-level environmental modifications and targeted caregiver awareness campaigns to mitigate these preventable health burdens.

Paediatric Hospitalization: Experiences of Informal Caregivers — A Qualitative Study at St. Patrick's Hospital Offinso, Ashanti Region, Ghana

A. Amosah, A. Gyamfi

ABSTRACT

The hospitalization of children is known to cause challenges for informal caregivers, mostly members of the family. The aim of the study was to explore the challenges faced by informal caregivers during the hospitalization of their children. We used exploratory qualitative design. Data were collected from informal caregivers of pediatric patients in the pediatric unit through in-depth interview. Each interview session was audio-recorded and later transcribed verbatim. Data was analyzed manually and thematically using Braun and Clark (2006) approach. Participants (n=10), mostly females aged 25-45 years who were mostly employed as traders and farmers participated in the study. Participants experienced four main challenges during the hospitalization of their children. Namely emotional distress, inadequate access to information and empathetic communication, logistical constraints and lack of emotional support. Informal caregivers will benefit from health, education on the progress of care for their children on admission, emotional support, and access to available resources such as transportation and financial assistance during the hospitalization of their children. The Ministry of Health should strengthen healthcare professionals'

training in family-centered care to improve the experience of informal caregivers.

Examining the Survival Outcome of Unintentional Injuries in Ghana

J. S. Stevens, E. K. Nakua, D. Gyaase, B. N. Adjei, D. Ansong, P. Okyere

ABSTRACT

Unintentional injuries are the leading causes of mortality, disability, and morbidity in Ghana and across the globe. Over 230 million dollars is spent by the Ghana government on the treatment and management of unintentional injuries annually. However, the survival outcome among victims of unintentional injuries in Ghana has not been adequately investigated. To examine the survival outcome of unintentional injuries in Ghana. The study was based on secondary data from an earlier study (TRANET) conducted in four teaching hospitals. TRANET instituted a routine surveillance system to capture all injuries reported to four teaching hospitals in Ghana between January 2017 and December 2020. Data extraction tool was developed to extract data from the TRANET database. Data was analysed using STATA version 16.0. Kaplan Meier survival curves were used to estimate the survival function of the outcome, and categorical differences were tested using log-rank tests at α=5%. The Cox proportional hazards model was used to examine the predictors for survival. A total of 10,996 unintentional injury cases were reported were examined in the study. Most victims were males (69.58%) and lived in urban (60.99%) areas. Over 88% of cases were road (56.4%) and fall (33.3%) injuries. 1.4% died, 6% survived with a disability, and 92.6% survived with no disability. The mortality rate was 1.7 per 1000 person-days and higher among the aged. Deaths were associated with age [the aged] (AHR=1.9), area of residence [urban] (AHR=2.4), Norther and Southern geographical belts (AHR=5.7 and AHR=4.3) and the Glasgow coma scale [Moderate and Mild] (AHR=0.1 and AHR=0.01). The mortality rate among the victims across the four teaching hospitals was relatively low but higher among the aged. The predictors identified must be considered when undertaking injury surveillance, UI prevention research, and programmes and policies aimed at reducing UI.

Epidemiological Study of Burns in Komfo Anokye Teaching Hospital, 2006-2009

J. Ankomah

ABSTRACT

To identify and describe the patterns of burns reported at the Komfo Anokye Teaching Hospital (KATH) from 2006 to 2009 and their outcomes on the various age groups and genders. Patients' records from admission and discharge books of the Burns Intensive Care Unit, Polyclinic Casualty Consulting Rooms and from the Statistical Department of KATH were reviewed to obtain the necessary data for this retrospective study. Data entry and analysis were done by using SPSS version 17.0. A total of 731 patients' records were reviewed, with male to female ratio of 1.2:1. The mean age was 15.83 years; range was 0-79 years. Children less than 10 years were the most frequently admitted group (53.5%). Most of the burns occurred in domestic settings (88.5%), whiles, majority of the burns were accidental (98.8%). Scalds (57.4%) were the most frequent cause of burns followed by open flame (38.2%). The mortality rate was 13.1% for the period under review. Majority (71.4%) of the patients spent less than 10 days on admission. The mean total body surface area (TBSA) was 24.79%, and there was significant correlation between TBSA, age group, outcome and duration of hospital admission. Children less than 10 years were the most vulnerable victims to burns; males dominated the number of victims. The commonest aetiological factor was scalds, with most of them related to inattention from parents. More dedicated burn surgeons and properly trained nurses are needed at KATH. Ambulance and pre-hospital services should be increased with adequate number of paramedics. Coordination between district hospitals and tertiary burn centres should also be established, for the proper transfer of burn cases to the tertiary burn centres, especially KATH.

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