Assessing the Role of Distracted Walking in Pedestrian Crashes

Zakari Abdul Karim Awini[1*], James Demsere-Derry[1], Nicolas Anarfi Bofah[1]

[*]Lead presenter: zakariabdulkarimawini@gmail.com

[1] CSIR- Building and Road Research Institute, Ghana

Keywords: Distracted walking, vulnerable road users, Pedestrian safety, Pedestrian distraction, Traffic exposure, Road safety.

Background: All over the world, pedestrians are the most vulnerable road users. Pedestrian safety is a major concern in Ghana, particularly in rapidly developing regions where road users face increasing risks. In Ghana, pedestrian fatalities accounted for 40% of road crash deaths between 2013 and 2022, with an average of 764 fatalities per year. While existing road safety countermeasures focus primarily on driver behaviour, pedestrian-related risk receives comparatively less attention. Notably, research indicates that drivers are not at fault in approximately 21% of all pedestrian crashes, suggesting that pedestrian behaviours, including distraction, may contribute to road crashes. Globally, mobile phone usage has become a road safety concern, while regulations exist to restrict mobile phone use while driving, no such laws govern pedestrian phone use at crossings. Anecdotal evidence suggests that mobile phone use among pedestrians is high and they could be distracted by these technologies. *Inter allia* distracted pedestrians may exhibit slower reaction times and reduced awareness, thereby exacerbating their vulnerability to road crashes. However, research on pedestrian distraction in Ghana is limited, with little data quantifying its impact on road crash exposure, necessitating further investigation. **Objective:** The objective of this study is to assess the prevalence of distracted walking in Ghana using the Greater Kumasi Area as a case study. **Method:** The researchers conducted an on-obstructive observation at the Greater Kumasi Metropolitan Area, focusing on high-traffic crossings along the arterial roads leading to the Central Business District (CBD). The enumerative sampling technique was used to observe pedestrian behaviour and identify types and frequencies of distractions, the enumerators surveyed as many pedestrians as possible except in instances where the numbers were overwhelming to be surveyed in which case they targeted the highest number possible. A structured checklist which contained the relevant demographic and distraction factors was used to record the observations. Traffic flow data was also recorded and analyzed to measure exposure levels at various crossing points. Descriptive statistics were generated using SPSS version 27. **Results:** In all 9,623 pedestrians were observed crossing the road. Of these 37% (n=3,553) pedestrians were engaged in distracted walking. It is important to indicate that some pedestrians were engaged in multiple forms of distraction, such as wearing headphones while simultaneously using their phones. Mobile phone use was the most prevalent distraction 60% (n=1,599 were holding and potentially distracted and another n=541 engaged in activities such as calling, texting, or watching videos). The second most important pedestrian distraction activity was face-to-face conversations 40% (n=1413) and headphone use 15% (n=531). The highest rates of distraction were observed among pedestrians aged 18–30, representing 40% (n=1411, while individuals aged 60 and above exhibited the lowest levels of distraction with only 0.5% (n=18). Eating and drinking were identified as a distraction primarily among children 1.2% (n=43). Gender differences in distraction behaviour were also noted, with males more likely to engage in mobile phone use while crossing 60% (n=1,291) while females exhibited higher face-to-face

conversation-related distractions 51% (734). Furthermore, distraction rates were higher during morning peak hours, with 52% (n=1838) of observed distractions. The study also found that distraction varied by crossing type. Signalized crossings had the highest distraction rate 44% (n=1563), followed by Zebra crossings 31% (n=1101) and then community crossings 25% (n=889). The mean vehicle flow rate across locations is 973 passenger car units per hour indicating a high pedestrian exposure. **Conclusions:** Distraction was observed to be prevalent at most crossing locations which could significantly increase pedestrian vulnerability to road traffic crashes. Therefore, it is recommended that road safety education be expanded to include pedestrians. Additionally, policy recommendations should focus on enacting laws guiding mobile phone use while crossing just like mobile phone usage among motorists.