DETERMINATION OF AMBIENT NOISE LEVELS AND THE EFFECTS ON AUDITORY HEALTH AND PRODUCTIVITY OF TEACHERS IN SELECTED BASIC SCHOOLS WITHIN THE OLD TAFO MUNICIPALITY, GHANA

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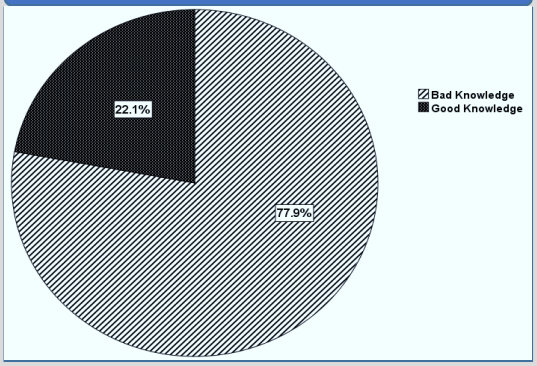
INTRODUCTION

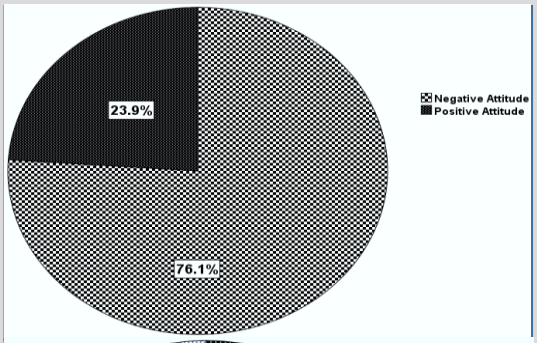
Exposure to elevated noise levels has an impact on health and work productivity. In Ghana, few studies have been done, with little to no attention paid to how noise exposure affects the auditory health and productivity of basic school teachers. The study aimed to determine the ambient noise levels and their effects on the auditory health and productivity of teachers in selected basic schools within Old Tafo Municipality, Ghana.

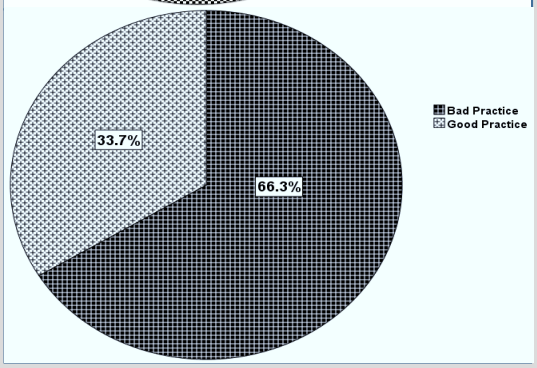
METHODOLOGY

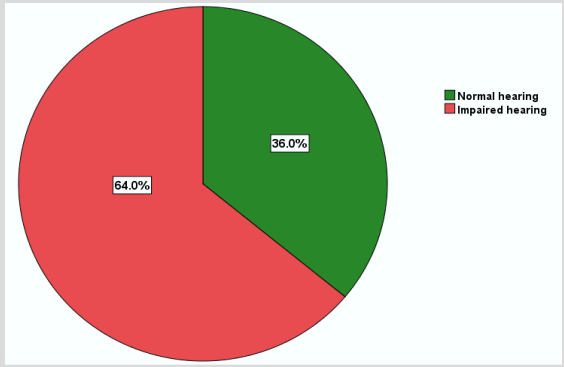
A survey was conducted using a set of questionnaires to evaluate the knowledge, attitude, and practice (KAP) regarding noise exposure and hearing loss, as well as the impacts of noise exposure on the teachers' productivity. Also, a calibrated digital sound level meter (SL-814) was used to record the average noise levels of the study sites. Audiometric testing was performed in order to quantify noise-induced hearing loss (NIHL). 300 teachers were sampled.

RESULTS









The study found that 77.9% of the basic school teachers had bad knowledge, while 22.1% had good knowledge. Also, 76.1% of the basic school teachers had a negative attitude toward the importance of noise reduction in the school environment, audiometry, hearing loss, and the wearing of hearing protection devices, while 23.9% of them had a positive attitude. 66.3% had bad practices with respect to audiometric testing, provision and use of hearing protection devices, as well as health and safety training, while 33.7% had good practices. Additionally, the study found that the noise levels for daytime measurement in the basic schools were beyond the EPA, Ghana, and WHO permissible thresholds (55 dBA). With long exposure duration (10+ years), most of the teachers developed mild NIHL. The elevated noise levels in the basic schools also made most of the teachers less productive.

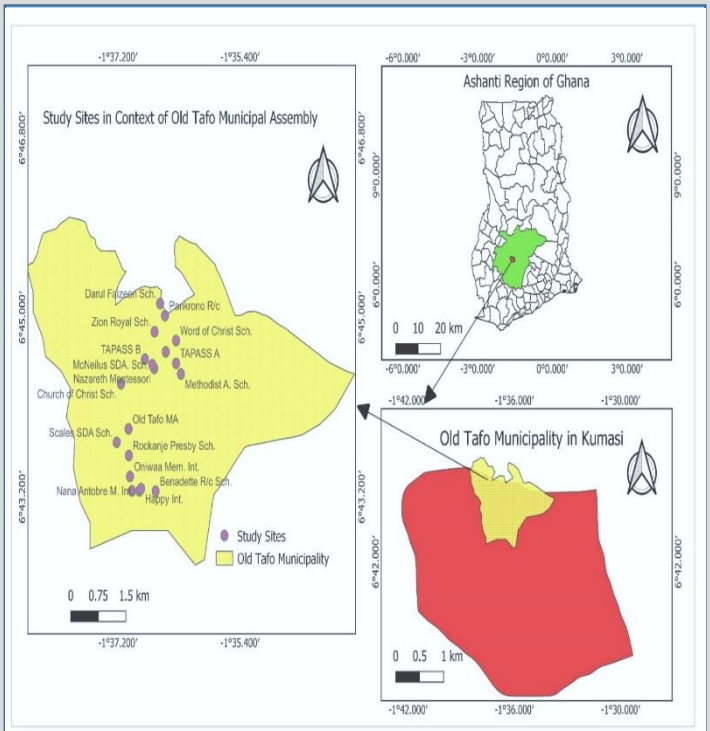


Figure 1. Map of Old Tafo Municipality showing the study sites

Source: Francis A. Osei developed the map using QGIS Software v 3.22.15

DISCUSSION

It was established that the basic school teachers within the Old Tafo Municipality are prone to developing NIHL due to the unacceptable noise levels in the schools' environment. However, it is argued that not all of the teachers will actually develop NIHL, despite the findings this study provides. The findings of the KAP evaluation suggest a dearth of education and training regarding noise exposure and hearing loss among the basic school teachers and a lack of audiometric testing and hearing protection devices, as well as health and safety training. Also, since most of the teachers are less productive, this may affect students' performance.

CONCLUSION

The elevated ambient noise levels of the basic schools causes mild hearing loss and make the exposed teachers less productive. this study recommends education and training of basic school teachers on noise exposure and its health implications. Additionally, preventive and awareness campaigns should be raised in the municipality, as well as the planting of bamboos, trees, and grasses such as *Pinus sylvestris*, *Picea abies*, *Acer pseudoplatanus, and Sambucus nigra,* to serve as barriers against noise penetrating the schools' environment.

REFERENCES

Osei, F.A. and Effah, E.A. (2022) 'Health Effects caused by Noise - The Case of Africa: Evidence in Literature from the Past 25 Years', *Asian Journal of Advanced Research and Reports*, 16(2), pp. 19–27. https://doi.org/10.9734/ajarr/2022/v16i230452.