Demographic Patterns of Acoustic Shock Syndrome as Seen in a Large Call Centre

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Abstract

Call centers represent one of the fastest growing industries in East Africa. However, there are health and safety KD]DUGV XQLTXH WR WKLV QHZ LQGXVWU\ 7KLV ¿HOG LV XQGHUH[SORUHG IRU Z VWXG\ VRXJKW WR HVWDEOLVK WKH SUHVHQFH RI DFRXVWLF VKRFN V\QGURPH LQYROYHG DQG WR GHWHUPLQH FRUUHODWLRQ EHWZHHQ [illegible]

In a descriptive cross-sectional study, a total of 1351 employees, male 579 and female 772 subjects were recruited. They were screened for Acoustic shock syndrome. The age group of the subjects for this study ranged IURP \HDUV 7KRVH VXEMHFWV ZLWK RWKHU PHGLFDO FRQGLWLRQV ZHUH H[DFRXVWLF VKRFN V\QGURPH XVLQJ D TXHVWLRQQDLUH DQG WKH DGH VH[DQG GX

The total number of people with Acoustics shock syndrome were 385. This study has noted that 13% of ZRUNHUV DW FDOO FHQWHUV GHYHORS $FRXVWLF 6KRFN V\QGURPH LUUHVSHFWL IHPDOHV DUH DIIHFWHG HTXDOO\ 7KH SHDN JURXSV DIIHFWHG DUH WKRVH ZLWK of noise measurement in such work environments need to be implemented so that a time weighted average can be HVWDEOLVKHG IRU SURWHFWLRQ RI H[SRVHG ZRUNHUV

Keywords: Call centers; Acoustic shock syndrome; Demographic; Depression

Introduction

Acoustic shock is an involuntary response to a sound perceived as traumatic (acoustic incident), which causes a specific and consistent pattern of neurophysiological and psychological symptoms. These include aural pain, tinnitus, hyperacusis/phonophobia, vertigo and other unusual symptoms such as numbness or burning sensations around the ear. A range of emotional reactions including trauma, anxiety and depression can develop [1].

The symptoms of Acoustic shock are usually temporary, but some may persist with ensuing permanent disability. The term acoustic shock disorder (ASD) is used to identify this persistent symptom cluster.

An acoustic incident is any sound that is perceived as threatening, usually a sudden/unexpected/loud sound heard near the ear. The sound is rarely loud enough or present for long enough to cause a noise induced hearing loss.

A call center is defined as a workstation where the basic tasks of a worker are carried out with the use of a phone and a computer. According to statistics, about 1.3-4% of workers are employed in call centers in the European countries. The number employed in Subsaharan Africa is rising yet occupational health measures to protect workers from harmful noise remains wanting [2]. Call centre staff using a telephone headset are vulnerable to ASD because of the increased likelihood of exposure, close to their ear(s), to an acoustic incident randomly transmitted via the telephone line. The objective of this paper is to study the magnitude of the Acoustic shock syndrome in a big call center in East Africa.

Materials and Methods

In a descriptive cross-sectional study, a total of 1351 employees, male 579 and female 772 subjects were recruited. They were screened for Acoustic shock syndrome. The age group of the subjects for this study ranged from 19-55 years. Those subjects with other medical conditions were excluded. The subjects were screened for acoustic shock syndrome and duration of work and demographic details were put in.

Results

The total number of people recruited for this study was 1351 employees, male 579 and female 772 subjects and 385 had acoustic shock syndrome. The results showed a bimodal distribution regarding the people who developed Acoustic Shock syndrome and their number of years at work 2 peaks: those who had worked for 3 years and those that had worked for 5 years (Figure 1). The number of people with acoustic shock syndrome declined as the number of years worked exceeded 5 years. Nine or more years at work saw the least number of people with acoustic shock syndrome. Furthermore, gender bias towards the female gender was seen with 53% females and 47% of males developing acoustic shock syndrome. These were however not statistically significant at 95% confidence interval p value of 0.05 (Table 1).

Discussion

Call Centre telephone operators experience acoustic incidents such as a sudden loud shriek or piercing tone through their headsets [3]. ACIFG616: 2004, Guideline-Acoustic Safety for Telephone Equipment, defines an acoustic incident as: The receipt by a telephone user of an unexpected sound that has acoustic characteristics that may

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cause an adverse reaction in some telephone users [4]. Depending on the characteristics of the sound and the user, an acoustic shock may result from the incident which is de ned by ACIFG616: 2004 as: Any temporary or permanent disturbance of the functioning of the ear, or of the nervous system, which may be caused to the user of a telephone earphone by a sudden sharp rise in the acoustic pressure produced by it [5].

e initial physiological symptoms of acoustic shock are considered to be a direct consequence of excessive, involuntary middle ear muscle contractions. While the stapedial re ex is an acoustic re ex triggered by high volume levels, the tensor tympani re ex is a startle re ex [6] which is exaggerated by high stress levels. e tensor tympani muscle contracts immediately preceding the sounds produced during self-vocalization, suggesting it has an established protective function to loud sounds [7], assists in the discrimination of low frequency sounds, and is involved in velopharyngeal movements [8].