

# Self-reported hearing quality of traffic policemen: A questionnaire-based study

## Abstract

**Objective:** To assess the knowledge, attitude and practices of traffic policemen towards the health effects caused by noise pollution. **Materials and Methods:** The present questionnaire-based study was carried out among 86 traffic policemen randomly selected for an awareness workshop for prevention of noise pollution. The questionnaire included questions regarding the self-assessment of the policemen about their hearing ability, past and present exposure to loud sound and the use of personal protective devices such as earplugs and earmuffs. The questionnaire was filled up by the subjects. The data analysis was carried out using Epi Info 3.3.2 and included calculation of percentages and proportions and application of the test of significance. **Results:** The mean age was  $39.2 \pm 7.8$  years and the mean years of exposure was  $2.1 \pm 1.8$  years. Only 2.3% of the subjects felt that their hearing ability was below average. 11.6% complained of regular tinnitus, while 62.8% had work-related tinnitus and experienced it during working hours only. Only 4.7% used earplugs and that too, very seldom. Reasons for non-usage of earplugs/earmuffs included non-availability (65.1%), discomfort (11.6%), bad fit (2.3%), personal dislike (16.3%) and headache caused by its use (4.7%). 67.4% subjects did not use any method to reduce exposure to noise, while remaining used fingers, hands and cotton to avoid noise exposure. **Conclusion:** The self-assessment of hearing by traffic policemen suggests that most of the traffic policemen have normal hearing. However, a systematic study with audiometry of these subjects is recommended.

**Key words:** Gujarat, KAP, noise, traffic policemen

Though technological advance has brought many conveniences, it has also resulted in many hazards. Pollution of various types is one of them. These include air pollution, water pollution, soil pollution and noise pollution. The automobiles are an important source of not only air pollution but also of a significant proportion of noise pollution. The traffic police engaged in controlling traffic, particularly at heavy traffic junctions, belong to the high-risk group to be affected by the health hazards of noise and air pollution.<sup>[1-4]</sup> Because the irritation of upper respiratory tract resulting in

cough is a somewhat acute phenomenon, most of the traffic policemen use a mask to prevent the ill effects of air pollution. However, a majority of them remains unaware about the health effects of noise on their hearing ability as this is an insidious process and takes long time to become overt.

Health effects of noise include both the auditory as well as non-auditory effects. Many studies have been carried out to study these effects in different categories of population exposed to high intensity and frequencies of sound in their workplaces.<sup>[5-8]</sup> However, the auditory effects of noise generated by automobiles among the traffic policemen have never been explored, particularly in India. This may be one of the reasons for not providing hearing protection devices to this group of work force. However, the need should be felt by the traffic policemen themselves and this can happen only when they have adequate knowledge about the associated health hazards. With this background, the present study has been carried out to assess the knowledge, attitude and practices of traffic policemen with respect to the health effects caused by noise pollution.

## MATERIALS AND METHODS

The present questionnaire-based study was carried out among 86 traffic policemen randomly selected for an awareness workshop for prevention of noise pollution. The questionnaire was filled before the start of the workshop. The questionnaire included questions regarding the self-

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assessment of the policemen about their hearing ability, past and present exposure to loud sound and the use of personal protective devices such as earplugs and earmuffs. The questionnaire was filled up by the subjects. Close supervision was followed so as to avoid the influence of one's result by the other subject. The data analysis was carried out using Epi Info 3.3.2 and included calculation of percentages and proportions and application of the test of significance.

## RESULTS

Table 1 shows the distribution of the study subjects according to demographic characteristics. Most of the subjects belonged to 35-45 years of age group. The mean age was found to be  $39.2 \pm 7.8$  years. Most of them had recently joined the police service, with the mean years of exposure being  $2.1 \pm 1.8$  years. Almost all the subjects had 5-8 years of schooling, with majority of the subjects having middle or secondary level of educational qualification.

Table 2 describes the self-assessment of hearing ability by the traffic policemen. Only 2.3% of the subjects felt that their hearing ability was below average, while the remaining 97.7% believed that their hearing ability was above average. However, the supplementary questions to assess the hearing ability revealed a slightly different picture. Six subjects reported that they usually missed a lot when conversing with someone on phone, while 2.3% reported similar condition while talking to someone in a crowd. 11.6% reported that while watching television they usually kept the sound louder to hear properly. 32.6% mentioned that others often indicated to them that they (policemen) were talking louder, while 41.9% felt that people usually talked louder with them so as to enable them to hear. 11.6% complained of regular tinnitus, while 62.8% had work-related tinnitus and experienced it during working hours only.

Table 3 depicts the distribution of the study subjects according to the usage of earplugs/earmuffs. Only 4.7% used earplugs and that too, very seldom. Non-availability of these personal protective equipments (PPEs) was the common reason for its

**Table 1: Distribution of study subjects according to demographic characteristics**

| Characteristics                 | Number | Percentage |
|---------------------------------|--------|------------|
| Age (in years)                  |        |            |
| <35                             | 32     | 37.2       |
| 35-45                           | 34     | 39.5       |
| ≥45                             | 40     | 23.3       |
| Duration of exposure (in years) |        |            |
| <5                              | 74     | 86.0       |
| ≥5                              | 12     | 14.0       |
| Education                       |        |            |
| Middle and secondary            | 42     | 48.8       |
| Higher secondary                | 12     | 14.0       |
| Graduate and above              | 32     | 37.2       |

non-usage as reported by 65.4% of the subjects. However, other reasons for non-usage included discomfort (41.6%), bad fit (2.3%), personal dislike (16.3%) and headache caused by its use (4.7%). 67.4% subjects did not use any method to reduce exposure to noise, while the remaining used fingers, hands

**Table 2: Distribution of study subjects according to their self - assessment of hearing status**

| Characteristics   | Number | Percentage |
|---|--------|------------|
| Quality of hearing  |        |            |
| Excellent   | 34     | 39.5       |
| Above average   | 28     | 32.6       |
| Average   | 22     | 25.6       |
| Below average   | 2      | 2.3        |
| Hearing over phone  |        |            |
| Without difficulty  | 60     | 69.7       |
| Do miss some conversation                                 | 20     | 23.3       |
| Miss a lot of what is said                                | 6      | 7.0        |
| Hearing in crowd  |        |            |
| Without difficulty  | 48     | 55.8       |
| Do miss some conversation                                 | 36     | 41.9       |
| Miss a lot of what is said                                | 2      | 2.3        |
| Sound of TV/ radio  |        |            |
| Usually louder  | 10     | 11.6       |
| Usually same loudness                                     | 20     | 23.3       |
| Usually a little softer                                   | 56     | 65.1       |
| Do people often indicate that you are talking too loudly? |        |            |
| Yes   | 28     | 2.6        |
| No  | 58     | 367.4      |
| Do people often have to talk louder                       |        |            |
| Yes   | 36     | 41.9       |
| No  | 50     | 58.1       |
| Tinnitus  |        |            |
| Almost all the time                                       | 10     | 11.6       |
| More than once a day                                      | 12     | 14.0       |
| About once a day  | 4      | 4.7        |
| About once a week   | 2      | 2.3        |
| More than once a year                                     | 4      | 4.7        |
| Work related or recreational                              | 54     | 62.8       |

**Table 3: Distribution of study subjects according use of earplugs/earmuffs**

| Characteristics                 | Number | Percentage |
|---------------------------------|--------|------------|
| Ever used ear plugs or muffs    |        |            |
| Yes                             | 4      | 4.7        |
| No                              | 82     | 95.3       |
| Regularity of usage             |        |            |
| Seldom                          | 4      | 4.7        |
| Never                           | 82     | 95.3       |
| Reason for non-usage            |        |            |
| Uncomfortable                   | 10     | 11.6       |
| Not available                   | 56     | 65.1       |
| Bad fit                         | 2      | 2.3        |
| Dislike                         | 14     | 16.3       |
| Cause of headache               | 4      | 4.7        |
| Other PPE                       |        |            |
| Hands                           | 18     | 20.9       |
| Cotton                          | 4      | 4.7        |
| Fingers                         | 6      | 7.0        |
| Don't use anything              | 58     | 67.4       |
| How effective are these methods |        |            |
| Average                         | 24     | 27.9       |
| Good                            | 2      | 2.3        |
| Better than plugs               | 2      | 2.3        |

and cotton to avoid noise exposure. However, out of these subjects using other methods, only 14.3% felt that these methods were good or better than the earplugs.

## DISCUSSION

The present study revealed that the study subjects were in the economically productive age groups and if they suffer from hearing disability at this age, they would have to live with that disability throughout their life. Fortunately, their duration of exposure was less and so not much could have been lost and if effective measures could be taken at that stage, health hazards could be well prevented. Only 2.3% of the policemen felt that their hearing ability was below average. This could be due to ignorance about the hazards caused by continuous exposure to noise and non-usage of PPEs. In a similar study among rock concert attendees, only 36.3% of the subjects felt that noise is likely to cause health hazards.<sup>[9]</sup> Better education may help in better understanding and motivation of the subjects in the health awareness workshops.

The self-assessed prevalence of reduced hearing was found only in two (2.3%) subjects. However, the supplementary questions to assess hearing ability suggested that it was higher though not felt by the subjects. Exact figures can be calculated by doing audiometry of these subjects. Thus on the basis of the findings of this study, it is recommended that the periodic medical examination should be done for the traffic policemen and it should include audiometry to assess the health effects of exposure to noise along with the investigations to measure the health effects of air pollution.

The study also revealed that the traffic police, in general, do

not use any personal protective equipments and the non-availability of these PPEs is the common reason for it. Thus it is suggested that not only should these PPEs be made available, but also periodic workshops should be carried out to motivate the subjects for their correct and regular usage. The effectiveness of the PPEs over other methods to reduce noise exposure should also be demonstrated.<sup>[10]</sup>

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