

Brief Report

Educational Level and Pseudohypacusis in Medico-Legal Compensation Claims: A Retrospective Study

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Abstract

Pseudohypacusis or the intentional feigning of hearing loss is a challenging situation in the medicolegal evaluation of hearing levels. Few studies have been performed on predisposing factors that make compensation claims susceptible to malingering. The goal of this study was to investigate the relationship between educational level and frequency of pseudohypacusis in a group of medico-legal clients.

Retrospectively, we studied the files of subjects (n=421) referred to the audiology clinic of a government hospital during a 12 month period. Educational levels of the individuals with and without pseudohypacusis were compared by the Chi-square test.

The results show that individuals with pseudohypacusis have lower educational levels than cooperative clients. The relative frequency of individuals with pseudohypacusis among illiterates (43.5%) was clearly higher than individuals with higher educational levels (17.5%).

The education level of a person filing a compensation claim may alert an examiner in detecting pseudohypacusis.

Keywords: compensation, educational level, nonorganic hearing loss

Introduction

Different terminologies are seen in the literature that describe hearing loss that cannot be explained by any organic disorder in the anatomy and physiology of the hearing system, such as: pseudohypacusis, functional hearing loss, non-organic hearing loss, and exaggerated hearing loss. Among them, generic terms such as non-organic or functional hearing loss are more appropriate when there is no information about the nature of the client's motivation (conscious versus unconscious). The term pseudohypacusis usually refers to intentionally exhibiting impaired hearing.¹ It is estimated that the deliberate feigning of hearing loss occurs in 10–50% of those seeking compensation.²

By pseudohypacusis, malingerers try to obtain larger legal settlements, pensions and/or compensation payments. The primary issue in injury-related lawsuits is financial gain. According to Islamic penal codes, if a person totally deafens one ear of the opposing party during a dispute, he or she is sentenced to pay half of the full blood money which currently (2009) is equivalent to about \$20,000.³ Obviously,

this amount of money or a fraction of it (proportional to the level of hearing loss) is high enough that individuals seeking compensation are motivated to pseudohypacusis.

Most knowledge about the socioeconomic and psychological status of adult clients with pseudohypacusis has been obtained from a few outdated studies in veterans and military personnel, such as studies by Gleason in 1958, and Trier and Levy in 1965 (both cited in Gelfand⁴). Loghman-e-Hakim Hospital located in Tehran is a main hospital for the evaluation of hearing loss in claimants for medico-legal and compensation purposes and employs three experienced audiologists. This study was conducted to study the relationship between educational level and frequency of pseudohypacusis among medico-legal clients.

Patients and Methods

Retrospectively, we studied the files of all clients (n=463) referred to the Audiology Clinic of Loghman-e-Hakim Hospital from Iranian Legal Medicine Organization during 5, April 2005 to 20, March 2006, equal to one Persian working year (1384).

Pseudohypacusis had been detected by a battery of subjective and objective audiological tests, which included tympanometry and acoustic reflexes, PTA and SRT, ascending-descending threshold gap, hearing threshold stability, and the Stenger test. Criteria for pseudohypacusis were absence of AC or BC shadow curve, more than a 10 dB discrepancy between PTA and SRT, more than a 10 dB discrepancy between hearing thresholds in ascending versus descending methods, hearing threshold variability more than 10 dB

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and a positive Stenger test. Once detected, the client was counseled for resolving of pseudohypacusis or referred to another center for an ABR test.

The educational level of the clients were considered based on the certificates issued by the Ministry of Education and Training, the Ministry of Sciences and Technology as well as Ministry of Health and Medical Education and Treatments services. Educational levels of the clients were categorized as illiterate, school (primary, secondary, and high school without a diploma degree), diploma (graduation from highschool) and associate degree to higher grades. Educational levels in the two groups (medico-legal clients with and without pseudohypacusis) were compared by Chi-square test.

Results

During a period of 12 months, Iranian Legal Medicine Organization referred 463 clients with age ranges of 6 – 75 years to the Audiology Clinic of Loghman-e-Hakim Hospital, Tehran for hearing assessments due to car accidents, occupational hearing disorder, domestic violence, and quarrel. Detection of pseudohypacusis was performed firstly by subjective and objective conventional and special audiological procedures. Ninety-eight people (21.16%) with a mean age of 35.5 years (SD=14.2) showed exaggeration in their true hearing thresholds. The educational level of 421 individuals (253 males and 168 females) was available at the time of data gathering. The clients' educational levels varied from illiterate to doctoral degree. Table 1 shows the frequency of pseudohypacusis according to educational level of these clients. Pseudohypacusis was considerably more frequent among illiterates than clients with other educational levels (43.5% vs. 17.5%, $P=0.001$).

Discussion

Our study shows that pseudohypacusis is more frequent in individuals with lower educational levels, particularly among illiterate individuals. In other words, the possibility of pseudohypacusis in clients with education levels lower than a diploma is significantly higher than clients with education levels of diploma and higher. This situation is clearly

evident in illiterate individuals in which pseudohypacusis had been detected in 17 out of 39 people (43.5%) while in individuals with educational levels of associate diploma and higher, 8 out of 54 people (14.8%) exhibited pseudohypacusis. A similar situation was present in other educational levels (Table 1).

We did not find any direct study on the educational levels of adults with pseudohypacusis in medico-legal clients. Several psychological or psychosocial abnormalities such as emotional disturbances, tendency to hypochondria and lower socio-economic status, diminished confidence in meeting needs of everyday life and avoidance of undesirable situations have been reported in pseudohypacusis clients.^{1,4}

Both poor and normal educational achievement have been reported in children with non-organic hearing loss.^{5,6} Children exhibiting functional hearing loss have wide ranges of intellectual abilities, from normal intelligence to below average intelligence quotient (IQ).⁴ However, motivating factors in children for showing pseudohypacusis may not be the same as adults. Parental attention and emotional support or justification of underachievement motivates a child to pseudohypacusis. Therefore, in contrast to adults, financial gain is not a primary reason for pseudohypacusis in children.

There was no information on the socioeconomic and psychological characteristics of the individuals with pseudohypacusis. In this study, the causes of a higher frequency of pseudohypacusis among illiterates are perhaps: lower economic status and IQ, less experience or information, and/or the combination of aforementioned factors. Although a chain of factors such as motivation and opportunity influences educational achievement, correlation between intelligence, and educational achievement is positive.⁷ In any event, this study was performed on a group of the medico-legal population which clearly showed low educational levels, particularly illiteracy was more frequently associated with pseudohypacusis.

Based on our experiences, the absence of an audiogram shadow curve as a clear sign of pseudohypacusis occurs among illiterate subjects who seek compensation more frequently than in more educated subjects, however, a subtle exaggeration in hearing thresholds occurs more frequently

Table 1. Distribution of educational levels in medico-legal clients with and without pseudohypacusis ($n=421$)

| | Educational levels | | | | Total |
|--------------------------|--------------------|-----------|------------|-----------------------------|------------|
| | Illiterate | School | Diploma | Associate degree and higher | |
| Pseudohypacusis negative | 22(6.5%) | 61(18.1%) | 208(61.7%) | 46(13.6%) | 337(100%) |
| Pseudohypacusis positive | 17(20.2%) | 16(19.0%) | 43(51.2%) | 8(9.5%) | 84(100 %) |
| Total | 39(9.3%) | 77(18.3%) | 251(59.6%) | 54(12.8%) | 421(100 %) |

in clients who are more educated. Tests such as the yes-no method may be effective in obtaining an audiogram in a simpleton client with pseudohypacusis but a frequency-specific auditory electrophysiology test is the only method for estimating hearing thresholds in a clever client who exaggerates in one or two test frequencies. It seems that illiterate people do not comprehend that the examiner may detect their simulation and therefore, clumsily exaggerate in their hearing loss. Consultation with people of lower education levels is easy and more effective. In addition to the characteristics and abnormalities seen in pseudohypacusis clients that require a complete interview and examination, during case history taking, the examiner can easily determine the client's education level. Our experience suggests that an alerting sign such as education level may help examiners in detecting pseudohypacusis, and even assist in consultation with a client for resolution of pseudohypacusis.

One of the strengths of this study is the wide spectrum of educational levels which ranged from illiterate to holding a doctorate degree. Such levels may be not accessible in a developed country. However, the education levels of 14 pseudohypacusis clients had not been recorded in their files,

which did not seem to significantly affect the study findings.

Additional larger scale studies are needed. The finding of this research shows that in medico-legal clients, illiteracy is more frequently associated with pseudohypacusis than higher educational levels.

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The courtyard of an old quadrangular 19th century house in Yazd-Iran (Source: Parham C, ed. *The Splendour of Iran*. Vol.2. London: Booth-Clibborn; 2001: 303)