

SELF-REPORTED HEARING LOSS AS AN ALTERNATIVE HEARING SCREENING TOOL AMONG ADULTS: AN INTRODUCTION TO INVENTORI LAPORAN MASALAH PENDENGARAN (ILAMP)

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According to the World Health Organization, around 2.5 billion people are expected to experience at least some degree of hearing loss by 2050. Out of the projection, only 20% sought medical help and left 80% with undetected hearing loss (1). Of these, the World Health Organization estimated that 430 million people require audiological rehabilitation to address their hearing disability. People with undetected hearing loss are very difficult to get employed due to communication difficulties among workers, low educational attainment levels and may have negative emotional impacts such as loneliness, social isolation, frustration, and depression (2). Thus, early detection of hearing loss is necessary to prevent the negative consequences of hearing loss.

The early detection of hearing loss can be done through hearing screening which is usually administered using various instruments including Pure Tone Audiometry (PTA), Otoacoustic Emissions (OAEs), Auditory Brainstem Response (ABR), and self-reported hearing loss questions. The instrument for hearing screening should be valid and accurate to detect hearing loss. Thus, the selection of

an appropriate instrument is essential to provide an accurate diagnosis, as well as a cost and time effective screening program.

Although PTA gives high sensitivity and specificity as a screening tool to detect hearing loss, the use of PTA in screening could be costly, requires trained personnel, calibrated audiometric equipment, as well as a quiet environment with low level of ambient noise which complies American National Standards Institute (ANSI) requirements. The use of PTA requires annual calibrations to meet ANSI specifications which is costly and could not be feasible in a condition where the ambient noise is

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high and no competence tester available, or when there is no allocation to buy equipment to conduct hearing screening. As an alternative to the PTA use in hearing screening, the previous study has shown that self-reported hearing loss questions can be used as a tool for hearing screening as it is easily administered, cost- and time-efficient (3).

Hearing screening using self-reported hearing loss questions can be administered in two ways either by: 1) self-administration or 2) interview. Through self-administered questions, the subjects will be given the questions and need to report the status of their hearing. Each response from the subjects will be evaluated to determine whether the subjects pass the hearing screening. Another method of administration of self-reported hearing loss questions is through interviews in which the

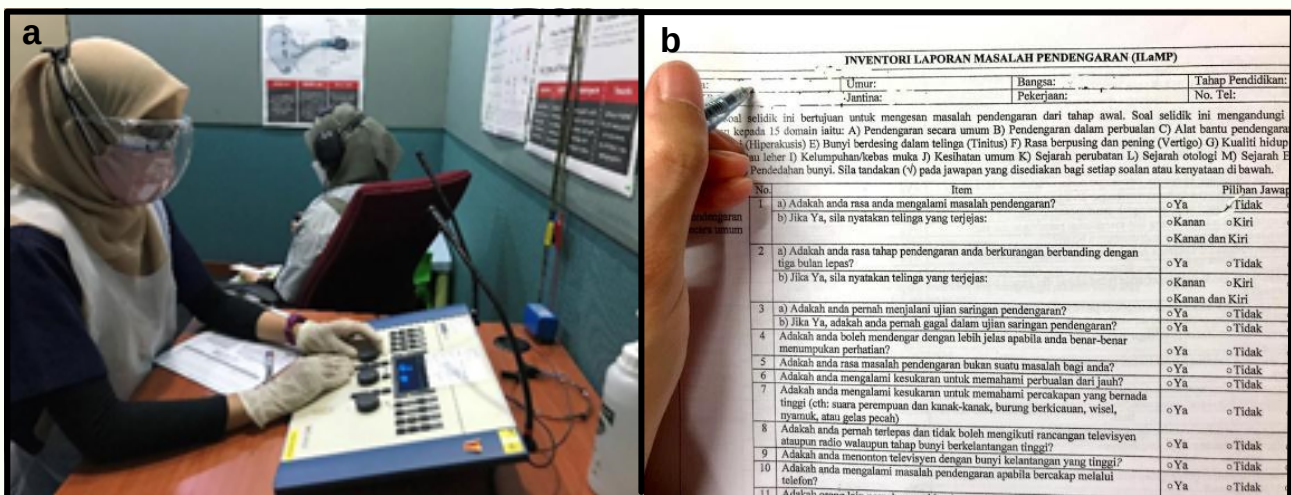


Figure 1: Screening process using a) Pure Tone Audiometry and b) self-report hearing questions

healthcare professionals ask a single or a series of question (s) to the subjects such as ‘Do you have a problem with your hearing?’ or ‘Do you feel you have a hearing loss?’ (3). A previous study has shown that the use of multiple questions is more sensitive to detect hearing loss than the use of a single question (4).

An ongoing study by the authors focuses on developing a Malay self-reported hearing loss inventory for adults known as Inventori Laporan

Masalah Pendengaran (ILaMP). The development of ILaMP was initiated due to the fact that there was no comprehensive self-reported hearing loss survey available in Malay. A pilot study of ILaMP on 90 subjects has been conducted. The initial analysis showed that ILaMP can differentiate between normal hearing and hearing loss subjects ($p < 0.05$). It has a good potential to be used as an alternative hearing screening tool due to its performance, easy administration, and cost- and time- efficiency.

However, further investigation on the sensitivity, specificity, and accuracy of ILaMP needs to be conducted on a larger population.

Self-reported hearing loss could not replace the Pure Tone Audiometry in screening, but could be an alternative screening tool when PTA is unavailable. The development of ILaMP may potentially enable its use as a hearing screening tool, for example, when conducting screening in rural areas or during tele-audiology clinical sessions. It is hoped that ILaMP could become a benchmark effort towards early detection of hearing loss among adults in Malaysia.

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