

EFFECTIVE COMMUNICATION WITH HEARING IMPAIRED PATIENTS: AN APPROACH FOR FAMILY PHYSICIANS

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ABSTRACT

With a rapidly ageing population, family physicians will encounter more patients with disabilities, including those with hearing impairment. Effective communication with these patients, especially those with chronic conditions is becoming increasingly important.

A case study is included to illustrate the difficulties faced by the hearing impaired patient in the community and consequent poor control of his chronic medical conditions.

The discussion includes: the main causes of hearing impairment locally, recognizing a patient with presbycusis, hearing aids and assistive devices, communication methods, enhancing effectiveness of communication, and finally community resources available.

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INTRODUCTION

In Singapore, one out of every 11 people has hearing impairment.¹ Based on a total population of 4.5 million, an estimated 410,000 people would have hearing impairment in Singapore. This number is expected to increase as an ageing population is emerging locally.

Hearing impairment is a common but under-reported problem among the elderly. An estimated 50% of those above 80 years of age have hearing loss.¹ In a local study of 63 patients at a hospital geriatric medicine service, 52 patients (83%) had hearing impairment, of which 34 were moderately severe and 18 were mild.²

With our modern socio-economic environment and a quality healthcare system in Singapore, many senior citizens remain physically healthy and are able to continue to work beyond their retirement age. Effective verbal communication is essential in their working environment and in the community.

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Nevertheless, hearing impairment is associated with significant adverse effects on a person's psychosocial and physical well-being. Telephone conversations become difficult, and affected individuals may start to withdraw socially. Depression, altered self-esteem, and diminished functional status are some serious negative outcomes.^{3,4}

METHODOLOGY

An on-line search on the topic was made, with focus on hearing impairment; hearing devices; communication; support and community resources in the local context. The main search databases were Pubmed and Medscape.

Local websites related to the topic were assessed, specifically the Association for Audiology Professionals, Singapore and the Singapore Association for the Deaf. Email correspondences to these organisations were made to further clarify points.

A visit to the Centre for Hearing and Ear Implants at Singapore General Hospital was made in early March 2010. A tour of the Centre was conducted for the authors by the audiologist in charge and this was followed by a discussion of the various hearing devices and also hearing rehabilitation.

CASE STUDY

This case is an illustration of how hearing impairment can impact a patient's life and work and ultimately the control of his chronic medical conditions.

Mr L is a 48-year-old Chinese man with diabetes mellitus, hypertension and hyperlipidaemia, diagnosed since 2005. He regularly defaults follow-ups, diabetic panels, and screening for diabetic eye and foot complications.

Control of his chronic diseases is suboptimal. His blood pressure range from 140/80 to 150/100 mm Hg and his HbA1c, done in Oct 2009 was 8.2%. He is obese with a weight of 77 kg (BMI = 28) with elevated serum triglycerides (2.27mmol/l) and LDL cholesterol (2.78mmol/l).

It was noted that Mr L was wearing a hearing aid and the family physician established that Mr L's frequent defaults from follow-up were due to difficulties faced in paying medical costs. Mr L was referred to the medical social worker in the polyclinic for investigation and assistance.

Mr L told the social worker that he had been working as a cook in a food stall in a busy hawker center for many years and was previously earning comfortably to support the family. However, with the onset of hearing impairment, he found it increasingly difficult to cope with the demands of his work. With the recent economic recession, workers are expected to

take on multiple tasks. Mr L had to serve customers, when he was not cooking. The noisy environment in the hawker centre diminished his hearing capability further. He was unable to hear the customers' food orders, despite wearing his hearing aid. His employer dismissed him and he has been unable to get back to the same work.

Mr L is married with 4 school going children. His wife works as a hawker assistant and her income is inadequate to support the entire family.

The medical social worker discussed with Mr L on his work expectations, and advised him to explore other job options. He was also referred to the CDC for job placement and financial assistance. Currently, he is holding a job at McDonald's.

DISCUSSION

1. What are the main causes of hearing impairment in the local community?

The common causes of hearing impairment in the community include hearing loss due to aging (presbycusis), noise induced hearing loss and impacted ear wax. Speech development for these affected persons is usually normal.

Presbycusis refers to hearing loss due to degeneration of hearing structures as a result of aging. The course of presbycusis is gradual onset, with gradual deterioration. In a local audiometric survey,⁵ the majority of people above 60 years have some degree of hearing loss. The hearing loss is progressive with age. It is sensorineural and greater at higher frequencies above 2,000kHz. Thus elderly persons are able to hear speech but are unable to discern its meaning. Above 80 years old, the hearing loss involves all frequencies.

Exposure to loud noise of 85 dB for more than 8 hours per day over prolonged periods of time can result in noise-induced deafness. Noise-induced deafness is the leading occupational disease in Singapore, with over 500 new cases detected by the Department of Industrial Health annually.⁶

In our modern lifestyle, we are being exposed constantly to loud noise which may have a large contribution to hearing impairment in the years to come. Exposure to loud music through earphones is common. It is not unusual to see young people listening to their MP3 players on public buses, oblivious that they are 'sharing' their loud music with other passengers.

In the primary healthcare setting, it is important to recognise conductive hearing loss from ear wax and chronic middle ear infections, for which effective treatments are available.¹

Nasopharyngeal carcinoma is common among Chinese adults. Nasopharyngeal carcinoma can present as hearing loss due to middle ear effusion, which the primary health physician must be mindful of. As radiotherapy is the primary modality of treatment and because the ear lies in the radiation fields, hearing loss in patients who have undergone radiotherapy is common.¹

2. How do family physicians suspect and recognize an individual with presbycusis?

During the early stages, the hearing loss is imperceptible. As time passes, the patient notices the following:⁷

- Increasing difficulty in understanding words when the speaker is talking rapidly. He may ask people to speak slower in an attempt to understand the conversation. The patient may complain that others are intentionally mumbling or slurring their speech.
- Inability to hear words correctly when they are unfamiliar or involve more complex ideas and thoughts.
- Problems in hearing a specific speaker when the ambient environment is full of sounds and distractions.
- Loss of the ability to hear high-pitched sounds and women's voices, while retaining the capacity to understand men's voices and to hear deep, rumbling sounds.
- Loss of the ability to tolerate loud noises.

A typical situation is at a busy restaurant, with people at adjoining tables engaging in noisy conversations, forcing the presbycusis sufferer to strain to hear the voice of a waitress as she recites the day's specials. This situation is similar (with reversed circumstances) to our case study, Mr L above.

Another situation could be a business meeting where several groups are holding side conversations, the listener is unable to comprehend the points the major speaker is making.

Relatives of the person affected with presbycusis may notice that he often cups a hand around his ear to increase the sound intensity.

He may voluntarily move a chair closer to the television or ask if he can sit toward the front of a movie theater or church. He may also move closer to the speaker when engaged in conversation.

Presentation and hence treatment, of hearing impairment is often delayed. It is estimated that the average time between the onset of hearing loss and seeking of medical help is about 10 years.⁸

As family physicians see our patients on a regular basis, opportunities for screening are abundant. A simple and effective screening method is to just ask the question: "do you have a hearing problem now?"^{8,9} If the answer is yes, proceed to assess conversational communication. Next, an audiologist referral maybe required. Advise the patient that effective and affordable hearing aids are currently available.⁹

3. What are the devices available to assist the hearing impaired patients?

Acceptance of hearing aids and hearing rehabilitation by the elderly is generally poor.¹⁰ In Singapore, almost 70% of the elderly who need hearing aids are not keen on having them, although 40% experience negative psychosocial effects as a result of the handicap.²

Some reasons for not using hearing aids include: social

stigma, cost outweighs benefits, physical discomfort, noise amplification, device performance issues, difficulty in adjusting instrument settings and instrument maintenance.¹⁰ In a local study, some said they were too old, others said they could cope with the disability.²

There is now a broad range of hearing aids on the market. Modern digital hearing aids have features and processing schemes previously not possible with analogue technology, making hearing amplification better and more comfortable.^{1,11} Hearing aids with automatic directional microphones, capable of enabling patients ability to understand speech in noisy environments, have evolved with advancement in technology. Besides better functioning, there is a trend towards increasing miniaturisation, which has progressed from body-worn aids, to aids worn behind the ear and in the ear canal.^{1,11}

Hearing assistive technologies (HATS) are incorporated into amplified telephones, FM listening systems, visual and tactile alerting devices. FM systems are used to enhance the effectiveness of hearing aids, by improving signal-to-noise ratio.¹¹ They use a transmitter to transmit the sounds by radiowaves, which are received by a receiver.

Matching the needs of the elderly and optimizing the performance of such devices requires the professional help of the audiologist. This includes a full assessment of the patient's communication needs, prescription of individualized hearing aids, rehabilitation and counseling.¹¹

In primary care settings, an affordable pocket hearing aid from the Siemens Amiga series (see picture below) may facilitate the family physicians' communication with their hearing impaired patients, who are not fitted with hearing aids. During the consultation, the family physician uses a wireless mini-microphone to speak to his patient, who wears a headphone to receive the doctor's messages. The headphone helps to reduce interferences from background noises in the environment.

Figure 1: Photo: The Siemens pocket hearing aid



Some patients have cochlear hair cells so severely damaged that conventional hearing aids are inadequate. Such patients may benefit from cochlear implants.¹

Besides devices that amplify sounds, there are assistive tools which can help the profoundly deaf cope better in day-to-day activities. These include silent vibrating alarm clocks and doorbells with flashing lights.¹¹

4. What methods can family physicians use to communicate with their hearing impaired patients?

Challenges in doctor-patient communication with the hearing impaired include: getting a proper history, explaining the diagnosis, patient education on disease and complications, counseling of lifestyle changes, and the need for routine investigations, surveillance and getting the patient to take the correct medications at the correct doses at the correct times.

In general, spoken communication alone will be insufficient. Many hearing-impaired people, out of pride or habit or just courtesy, will smile and nod when you question them and present information, when in fact they do not follow you at all or only partially.¹²

The elderly hearing impaired patient may misunderstand the communication and answer inappropriately. They may fail to answer or ask for repetition. This may lead to a misdiagnosis of dementia. The doctors may instead choose to talk to the patients' relatives about the management of the medical conditions, thereby neglecting the patients' direct involvement in their care.¹²

I. Speech-reading

For Standard English, only about 30 percent of the speech sounds are visible on the lips under ideal conditions. The rest of the information must be filled in by the hearing impaired based on their educational level, and on their knowledge of the topic being discussed. Any extensive use of new vocabulary will greatly impede their ability to follow the speaker. Thus, the use of medical terminology is a special problem for hearing impaired patients. Persons with the same degree of hearing loss vary greatly in their ability to receive communication through speech-reading alone. The physician must be ready to convey ideas and messages at varying levels of language proficiency.¹²

II. Writing

Writing can be used successfully with literate hearing-impaired patients. This is especially effective when writing is used in combination with understandable or partly understandable patient speech and good speech-reading by the patient of the doctor's speech.¹²

The disadvantage is its restrictive nature. It is slow and tedious to use as a conversational mode. Good doctor's handwriting is essential. Maintaining confidentiality is, however, an advantage in this mode of communication.

In Singapore, the majority of elderly patients are still illiterate or with a low level of education. They may produce written information, which the family physician may or may not be able to decipher. Further, they will have great difficulty following your ideas if you use complex sentences or vocabulary.¹² For the latter group, an interpreter may be needed.

III. Visual aids

"A picture is worth a thousand words". Any chart, diagram

or picture that can be used to illustrate medical terminology or processes, will be of great benefit to the family physician, interpreter and hearing normal patient as well as hearing impaired patients.

Since the patients can look at only one thing at a time, it is crucial not to talk about the visual aid and point to its intricacies simultaneously. The family physician may have to shift back and forth the visual aids, in tandem with what the patient wish to express or communicate.¹²

IV. Visual language

Visual or sign language is often the medium of communication for patients who have congenital or childhood onset hearing impairment without any medical or surgical interventions. The skills are often provided as part of their education. In the American system of finger spelling,¹² the preferred hand is used to spell out each word to be communicated. Each letter of the alphabet has a different hand configuration. With experts, communication can be fairly rapid, though considerably slower than verbal communication in those with normal hearing. Most will use finger spelling only for those words, concepts and technical jargon for which no sign is available. Reception involves specific perceptual and cognitive learning, as does any other form of linguistic communication.

However, any family physician who can finger spell and read finger spelling, however badly it may be, will be able to facilitate his communication with hearing impaired patients. Trying to communicate in their language means a great deal to the hearing-impaired person, indicating that the physician cares about them and in turn, who they will be more likely to accept and trust.

Family physicians may want to go for sign language courses conducted at the Sadeaf. More information is obtainable from its website.¹³

For vocabulary and concepts in general situations, a system of conceptual signs¹² is used. The sign is a configuration of the body which stands for a concept or word, alleviating the need to use finger spelling for everything and making rapid conversation possible. Fluent users generate new signs which are specific to their needs in their own jobs and lives. As a communication medium, "signing" is rich, exciting and dramatic, serving hearing-impaired people as well as the spoken language serves those who hear.

SEE 2 (Signing Exact English) has been adopted as the language of instruction among deaf children in Singapore since 1977.¹³ SEE 2 is a Manually Coded English system. It is a Sign system that makes visual the English Language through the hands. It was developed in 1969 in USA with the aim of teaching deaf children English. About 75% to 80% of SEE 2 signs are either borrowed from American Sign Language (ASL) or modified ASL signs¹².

According to the Singapore Association for the Deaf (Sadeaf), most deaf people in Singapore use a mixture of local

sign language, Signing Exact English (SEE2) and American Sign Language. In Sadeaf, Total Communication (TC) is practiced. This is the use of any and every available means of communication and includes reading, writing, gesturing, sign language, speech-reading, finger spelling and assisted hearing.¹³

V. The Interpreter

An interpreter becomes a necessity as an interface between the hearing and the hearing-impaired in two basic situations.¹²

- When one-to-one communication is impossible because of some combination of the factors as discussed earlier, or
- When the absolute importance of the communication (such as discussing a major surgical operation) or the imposition of time constraint leaves no room for slow or occasionally inaccurate communication.

Interpretation involves keeping the ideas and concepts being communicated equivalent, while varying the absolute structure and vocabulary, so that both parties can understand what is being said. Consequently, an interpreter's task is not an easy one, and should not be undertaken in crucial situations except by highly skilled and trained interpreters. The use of friends or family members as interpreters should be avoided, especially when the possibility of discussion of sensitive information and the importance of confidentiality are considered.

In Singapore, interpreters for the deaf are certified by Sadeaf. Charges do apply. Information is available on the Sadeaf website.¹³

5. How do family physicians maintain effective communication with their hearing impaired patients?

The hearing impaired patient needs visual cues.^{12,14} To speak to them, first, one must attract their attention. Call their names, go within their visual fields. Face the hearing impaired directly. A simple question for patients with hearing aids: "can you hear me now?" before starting the conversation is very helpful.

Avoid glancing around the room, digging in files or blocking the patient's view of your face and mouth with your hands or other objects.^{12,14} In the clinic context, the wearing of surgical masks and other forms of personal protective equipment will only mean the hearing impaired patient will not be able to speech-read.

Poor lighting in the consultation room will also make it difficult for the hearing impaired to lip-read.

Avoid conversations in places with loud noise. Doors to consultation rooms need to be closed. In the Polyclinic, we may have to look into ways to cut noise levels. Piped music, public address systems in the consultation rooms may not be suitable in this situation.

Move closer to them.^{12,14} This reduces the distance the sounds have to travel and cuts the background noise. This is one exception to the communication rule of giving personal space to the patient.

It is best to speak at a normal conversational rate and in a normal conversational tone - unusual variance in either will distort your speech patterns so that speech reading is difficult, if not impossible.

One may speak louder and clearly but there is no need for shouting. This will prevent hearing aid overload, discomfort to the wearer, and will not produce additional sound for the profoundly hearing impaired.¹²

During the consultation, you will need to probe the patient's understanding of what you have said and be prepared to provide explanations of medical jargon in lay terms.¹² In addition, sudden or unannounced shifts in topic can be very confusing and will often cause a breakdown in communication. Forewarn the patient of the impending change of topics and what you will be talking about.¹²

If the patient has difficulty hearing some words, restate the message using different words with different sounds, as some sounds may be difficult to hear even with hearing instruments.¹² Other options include communication in writing or utilization of the pocket hearing aid for the hearing impaired patient and the microphone by the attending doctor.

Maintain constant eye contact with patients.¹² It is important that you watch their nonverbal behaviour for cues of confusion or distress, and when you see such cues, investigate the source with them immediately. Anxiety may cause them to misinterpret your communication.

Take note of hearing fatigue.¹² Concentrating on hearing takes a lot of energy. When hearing fatigue sets in, performance diminishes. Unnecessary prolongation of the conversation may be counter-productive.

Good communication with the hearing-impaired

SCREEN: Do you have a hearing problem?

ASK: Are you able to hear me now?

MAINTAIN face to face contact.

LIGHTING should be bright.

NOISE in consultation room kept to minimum.

SPEAK LOUDER at a normal conversation rate and tone but do NOT SHOUT.

DISTANCE between patient and doctor close.

CHECK UNDERSTANDING.

AVOID prolonged conversations.

6. What are the community resources available to support the hearing impaired patients?

A needy person may apply for government funding for hearing aids under the Assistive Technology Fund (ATF) up to \$10,000 per person per lifetime or up to 90% of the cost. To be eligible for this support, the patient needs to be actively working or seeking a job. This fund comes under the Centre of Enabled Living (CEL) set up by Ministry of Community Development, Youth and Sports (MCYS). The application form can be downloaded from the CEL website: <http://www.cel.sg/AssistanceScheme4.aspx>.¹⁵

The Special Assistance Fund (SAF) available for non-working clients. The SAF was set up by the National Council of Social Service (NCSS) in 1991. The objective is to provide financial assistance to persons with disability from low-income families to purchase assistive equipment or technical aids for mobility or rehabilitative purposes. Details are obtainable from this website: <http://www.ncss.org.sg/vwocorner/saf.asp>.¹⁶

Sadeaf also has a Community Integration Support Programme which provides a comprehensive range of services for the deaf.¹³ This includes counselling, guidance, audiological testing, certification of deafness, financial assistance, assistance with job seeking, information and advice on appropriate resources available in the community and provides referral when necessary.

CONCLUSION

Technology is now available to effectively enhance hearing in patients with hearing loss.

Many problems faced by the hearing-impaired are the result of the ignorance of family members, friends, peers, teachers, medical professionals and others around them. In order to truly understand the hearing-impaired, these people must be effectively educated on the limitations faced by the hearing-impaired. This may include getting these people to experience the sounds actually heard by the hearing-impaired, in simulated conditions.¹

Suggestions for improving communication with the hearing impaired should be organized and implemented into standard clinic operating procedures. The result is greater patient safety and improved patient's satisfaction.¹⁷

As family physicians, we have to endeavour to understand the needs of the hearing impaired especially those in the older age groups, encourage the use of modern hearing devices and train ourselves to interact more effectively with this group of patients. Our aim is to enhance the patient- doctor relationship and hence to improve therapeutic compliance and as well disease outcomes.

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