A Survey Regarding the Practice of Aural Rehabilitation Among Audiologists in Malaysia

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CERTIFICATE

This is to certify that the dissertation entitled A Survey Regarding the Practice of Aural Rehabilitation Among Audiologists in Malaysia is the bonafide record of research works done by Asyah Hafiza Binti Mohamad Nor Anual, 87837 during the period of July 2008 to April 2009 under my supervision. This dissertation submitted in partial fulfillment for the degree of Bachelor of Health Sciences (Audiology). Research works and collections of data belong to Universiti Sains Malaysia

ABSTRACT

Aural Rehabilitation (AR) is an important component in audiology. AR helps sufferers with hearing impairment to address the impact of hearing loss, such as communication problems. Audiologists should practise AR activities regularly to lessen the difficulties faced by the patients. This survey aimed to determine the status of AR practice among audiologists working in different settings in Malaysia. Questionnaires were given to 97 audiologists throughout Malaysia by mail. They were asked to fill in the questionnaire and returned it to the researcher using the provided envelope with stamp and address. Only 49 of them (50.5%) responded and this was considered sufficient. Data were analyzed from all 49 respondents. From the study, 93.9 % of the respondents claimed that they practise AR activities on their patients. Out of 93.9% audiologists who practise AR activities, 100% of them worked in private hospitals, government hospitals, university hospital and hearing aid centers. While, 57.1% of respondents who worked at university clinic performed AR activities, the remaining 42.9% did not perform AR activities. Only 24.5% of the respondents claimed that they always conduct AR activities during clinical session. Majority of the respondents (91.8%) provided hearing aid orientation services as part of AR activities and 61.2% of them claimed that they do auditory training. In general, AR practice in Malaysia seems to be adequate, at least in this study. However, a major concern is that only 24.5% of Malaysian audiologist claimed that they always perform AR activities. This number should be improved as time goes by. Respondents also claimed that the lack of facilities and support, time, exposure and experience are the reasons for not providing effective AR services. Most of them did agree that having more training or seminar in the area of AR can be beneficial to them and the society.

ABSTRAK

Rehabilitasi aural merupakan komponen penting dalam audiologi. Rehabilitasi aural boleh membantu mereka yang mempunyai masalah pendengaran untuk mengatasi masalah lain seperti masalah untuk berkomunikasi. Audiologis perlu mempraktiskan rehabilitasi aural untuk mengurangkan kesulitan yang dialami oleh pesakit mereka. Kajian ini bertujuan untuk mengetahui status praktis rehabilitasi aural dalam kalangan audiologis yang bekerja di pelbagai sektor di Malaysia. Kaji selidik telah diedarkan kepada 97 audiologis di seluruh Malaysia melalui pos. Mereka diminta untuk mengisi kaji selidik ini dan memulangkan semula kepada penyelidik menggunakan sampul surat beserta alamat dan setem yang telah disediakan. Hanya 49 audiologis (50.5%) memberikan respon dan data dianalisis menggunakan jawapan mereka. Berdasarkan kajian ini, 93.9% daripada mereka menyatakan bahawa mereka mempraktiskan rehabilitasi aural. 100% daripada mereka bekerja di hospital swasta, hospital kerajaan, hospital universiti, dan pusat alat bantu pendengaran. Manakala 57.1% daripada mereka yang bekerja di klinik universiti mengamalkan rehabilitasi audiologi dan selebihnya tidak mempraktiskannya. Hanya 24.5% daripada mereka selalu mempraktiskan rehabilitasi aural semasa sesi klinik. Kebanyakan daripada mereka (91.8%) menyediakan perkhidmatan orientasi alat bantu pendengaran di samping latihan auditori (61.2%) kepada pesakit mereka. Kajian ini mendapati bahawa praktis rehabilitasi aural adalah mencukupi, tetapi peratusan 24.5% audiologis selalu mempraktiskannya perlu ditingkatkan dari masa ke masa. Responden turut menyatakan bahawa kekurangan kemudahan dan sokongan, masa, pendedahan dan pengalaman memyebabkan mereka tidak dapat memberikan perhidmatan rehabilitasi aural yang efektif. Mereka juga bersetuju seminar dan latihan dalam bidang rehabilitasi aural memberikan banyak faedah kepada mereka dan juga masyarakat.

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ABBREVIATIONS

AR - Aural Rehabilitation

ALD - Assistive Listening Devices

ASHA - American Speech-Language Association

CAPD - Central Auditory Processing Disorder

CI - Cochlear Implant

HAO - Hearing Aid Orientation

NMRR- National Medical Research Register

SLP - Speech-Language Pathologist

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CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

1.1 HEARING LOSS AND ITS IMPLICATION

Hearing loss is a major problem in communication. In elderly population, hearing loss is the third most common chronic condition (Lethbridge-Cejku & Vickerie, 2003; Cruikshanks, et.al, 1998). Approximately 31 million American have hearing loss (Kochkin, 2005). Adults with hearing loss may face communication difficulties which could lead to depression, social isolation and functional problem such as balance problem (Nichols, 2006). Pre-lingual children with hearing loss may have speech and language developmental delay due to difficulties in speech perception.

Hearing loss is characterized by type, degree, and time of onset of hearing loss. Type of hearing loss includes conductive, sensorineural and mixed hearing loss. Conductive hearing loss happens often due to problems in the outer and middle ears. In this situation, transmissions of sound to the inner ear are disrupted and cause a decrease in ability to hear soft sounds. Sensorineural hearing loss is due to damage to the inner ear or the auditory nerves up to the brain. This damage interrupts the processing of sound which affects the ability to understand speech. Mixed hearing loss is due to a combination of both conductive and sensorineural hearing lossess.

Hearing loss can vary from slight, mild, moderate, moderately severe, severe and profound hearing loss. Based on the three frequency puretone average of 500 Hz, 1000 Hz, and 2000 Hz, Goodman (1965) classified that normal hearing falls at threshold less than 26 dB HL. Mild hearing loss ranged at 26 to 40 dB HL, followed by moderate hearing loss at

41 to 55 dB HL, moderately severe hearing loss at 56 to 70 dB HL, severe hearing loss at 71 to 90 dB HL and profound hearing loss at threshold more than 90 dB HL. Meanwhile, Jerger and Jerger (1980) stated that normal hearing falls in range of less than 21 dB HL. Northern and Downs (2002) suggest that the normal hearing upper limit is at 15 dB HL.

The onset of hearing loss may be divided into pre-lingual, perilingual and post-lingual (Tye-Murray, 1998). Pre-lingual hearing loss usually happens to children with congenital hearing loss or children who acquire hearing loss after birth. This means that they have not yet learned any language skills. A child who already has some language ability and incurs hearing loss before the language skills acquirement is complete is said to have a perilingual hearing loss. A person with hearing loss after acquiring total speech and language skills is known as post-lingual hearing loss. Other than that, hearing loss may occur suddenly or progressively.

Therefore, AR services should be implemented to address problems that may occur due to hearing loss. However, AR plan should be carried out individually as each person with hearing loss is unique and may face different kind of difficulties than others.

1.2 HIERARCHY OF LISTENING SKILLS

Hearing is important for the purpose of communication. Normal hearing person may not be having a problem to communicate verbally with others unlike hearing impaired person. Thus, hearing impaired person needs an amplification to help them overcome communication difficulties. The auditory skills of each individual develop in four phase which are detection, discrimination, identification and comprehension.

Detection is simply defined as awareness towards sound when it is present or absent. The sound awareness usually triggers spontaneous response especially for young children. This stage only happens in normal hearing person and mostly in hearing impaired person with amplification.

The next phase is discrimination stage. In this stage, the listener should be able to distinguish the differences of suprasegmental information such as intensity, duration, pitch, and timing (Bader, 2001). Basically, the listener is able to differentiate whether two sounds are different or the same without necessarily understood the associate meaning (Tye-Murray, 1998).

Identification level comes next after discrimination level. However, it could occur simultaneously together. Identification is at the stage at which listener can repeat, point, or label specific set of sounds or auditory stimuli (Bader, 2001; Tye-Murray, 1998).

The final stage in auditory skills is comprehension. Comprehension is a higher auditory skill leveling which the listener is able to understand the meaning of spoken language (Tye-Murray, 1998). Listeners demonstrate their knowledge of language in this stage (Erber, 1982). Other than that, the listener also should be able to master receptive and expressive language in which they will be able to answer questions, follows instructions and communicate with others.

For normal hearing people, they will progress through these stages easily, but for those hearing impaired person, they may progress at a slower rate than their peer or none at

all. However, with effective aural rehabilitation services, they may be able to develop auditory skills normally.

1.3 DEFINITION OF AURAL REHABILITATION

Aural Rehabilitation (AR) is defined by American Speech-Language Hearing Association (ASHA) (1984) as "services and procedures for facilitating adequate receptive and expressive communication in individuals with hearing impairment. This services and procedures are intended for those persons who demonstrate a loss of hearing sensitivity or function in communicative situations as if they possess a loss of hearing sensitivity".

According to Singular's Illustrated Dictionary of Audiology (1999), AR is an intervention aimed at minimizing and alleviating the communication difficulties associated with hearing loss.

AR is also defined as "an attempt to reduce the barriers to communication that result from hearing impairment and facilitate adjustment to the possible psychosocial, educational, and occupational impact of that auditory deficit (Hull, 2001).

1.4 ROLE OF DIFFERENT PROFESSIONALS IN AURAL REHABILITATION

1.4.1 Audiologists

Typically, audiologist will assume a major role in developing an individual's AR plan (Schow & Nerbonne, 2002; Tye-Murray, 1998). However, audiologists seem to focus

more on the diagnostic aspects of audiology than AR services which seem abandoned (Hardick, 1977; Rosen, 1967).

A study by Schow, Balsara, Smedley, and Whitcomb (1993), revealed some information regarding the AR practice in the USA for the period of 1980 – 1990. From this survey study, only 37% of practicing audiologists performed AR in 1980. This value had increased in 1990 whereby 57% of audiologists were practising AR activities. This is related to an increase in hearing aid dispensing from 21% to 73%. However, audiologists today give less emphasis to some classic forms of rehabilitative audiology such as speechreading (19%) and auditory training (16%) but put more emphasis toward hearing aid orientation (88%) (Schow et al., 1993).

1.4.2 Speech-Language Pathologists

Other than audiologists, speech-language pathologists also participate in providing AR services to the patients. In some cases, they may play the lead role especially for a child in a school environment as they provides speech and language therapy (Tye-Murray, 1998). They often provide auditory training and speechreading training to children to maximize speech and language understanding.

1.4.3 Special Teachers

Teachers for children of hard-of-hearing also play an important role in aural rehabilitation. They provide guidance and assistance for children to hear well and to have a smooth learning process as normal children should have.

CHAPTER 2

LITERATURE REVIEW

2.0 LITERATURE REVIEW

2.1 COMPONENTS OF AURAL REHABILITATION

To understand AR and its implementation, it is essential to know its components. Perhaps the most convenient way to explain AR component is by describing the model for audiologic rehabilitation by Schow (2001). According to this model, AR comprised of rehabilitation assessment and rehabilitation management. The rehabilitation assessment emphases on confirmation of communication status from audiological diagnosis and self-report; overall participation variables such as psychological, social, vocational and educational; related personal factors which are person's attitudes, age, race, gender and etc.; and environmental factors. The rehabilitation management stresses on counseling and psychosocial aspects that include interpretation of audiological findings to the client, informational counseling and guidance, and give an understanding to the client regarding their impairment; audibility improvement using amplification and assistive devices; remediation of communication activity; and environmental coordination in order to improve hearing and communication.

AR services should aim to address patients' difficulties in communication. Thus, Hull (2005) suggests a few principles for providing effective AR which include AR services that center on the specific needs of the patient. Audiologists should help and work with the patient to develop strategies to overcome specific communication environment. Other than that, audiologists should encourage patients to make their own goals and plan for AR activities. Patients should be aware of their own responsibility as a key to a successful outcome. Furthermore, group therapy should be available along with individual

therapy. This is important so that patients can discuss their difficulties together and mix with other people who also encounter similar problems that they are experiencing.

2.2 STATUS OF AURAL REHABILITATION WORLDWIDE

Aural rehabilitation (AR) program was very much needed during the World War II to help servicemen who lost hearing in the war (Ross, 1997; Schow & Nerbonne, 2002). Since then, AR program has evolved in order to help those with hearing loss through the use of speechreading, auditory training, hearing aids or assistive listening devices.

A survey study on aural rehabilitation status by Millington (2000) showed that 66% of audiologists considered diagnostic and rehabilitative audiology as their clinical duty. This could be due to a tremendous increase in hearing aid dispensing activities and broadening scope of practice in audiology (Tye-Murray, 1992; Sullivan, 1996; Keith, 1996; Staab, et al., 1997; Sykes, 1997; *Modern Medicine*, 1998; Mraz, 1999; Strom, 1999; Jacobson, 2000; Mueller, 2000; Nemes, 2000; Servedio, 2000). The percentage of audiologists dispensing other assistive devices has also increase since 1990 from 16% to 27% in 2000. This survey also revealed 92% of respondents gave general counseling, 37% provided cerumen management, 26% performed central auditory processing disorder (CAPD) evaluation and 37% involved in CAPD remediation, and 34% provided vestibular rehabilitation.

Millington (2000) also found that auditory training service has increased to 23% from 1990 survey. This is perhaps due to increased therapy with cochlea implant recipients since the therapy has doubled in the last 10 years from 12% to 25%. Overall, this survey

reveals that audiologists continue to provide major rehabilitative services focused on hearing instruments, but gradually expand with the emerging of new rehabilitative approaches especially in tinnitus, vestibular disorder, CAPD and cochlea implants.

According to Prendergast and Kelly (2002) in their survey study on types and rate of AR services provided by audiologists, assistive listening devices (ALDs) was the most frequently (84%) AR services delivered to patients in various work settings. It was then followed by communication strategies training (83%), informational counseling (82%), coping strategies training (57%), and psychosocial adjustment counseling (45%). In this situation, auditory training and speechreading were the most rarely AR services provided by audiologists. Lacks of time, resources and interests in providing AR services were reported in this study. Prendergast and Kelly (2002) suggest that ongoing education may result in more acknowledgements towards the importance of AR services and motivated audiologists to find ways to present them efficiently.

2.3 THE IMPORTANCE OF AURAL REHABILITATION

The needs of AR today are as much as in the past (ASHA, 1984; Chartrand, 2000; Ross, 1997, 2000). Hearing loss will cause immense impact on verbal communication and could later on affects educational, vocational, psychological and social aspects of the individuals (Schow & Nerbonne, 2002). Therefore, AR is designed to lessen the difficulties related to hearing loss and to minimize the negative consequences of hearing impairment so that the quality of life could be improved (Tye-Murray, 1998).

AR is important to help hearing-impaired patients to cope with their daily life yet audiologists seemed to abandon the rehabilitative part of AR. Audiologists should play an important role in planning a good AR plan (Schow & Nerbonne, 2002; Tye-Murray, 1998).

A good AR services has been found to produce better outcomes (Abrams et al., 1992; Kochkin, 1999; Kricos & Holmes, 1996; Northern & Beyer, 1999; Smaldino & Smaldino, 1988).

However, most audiologists only provide hearing aids services that include fitting, evaluation, and orientation with no additional services implemented such as auditory training, psychosocial adjustment counseling, assistive listening devices, and so on (Bate, 2000; Clark, 2001; Goldstein & Stephens, 1981; Tye-Murray et al., 1994; Ross, 2000).

Millington (2000) stated that over 80% of ASHA audiologists provide hearing aid orientation as a part of aural rehabilitation, but fewer audiologists provide other type of AR such as group rehabilitation, communication training, tinnitus management, and work with cochlea implants based on the surveys of AR in 1980-1990.

Results of 1990 survey indicated that fewer clinicians were providing communication training than in 1980, down from 38% to 23% and little changes was found in the follow-up survey by Millington in 2000 in the provision of communication training since 1990 (Prendergast & Kelly, 2002).

From previous studies, it has been found that majority of audiologists do not perform AR activities due to several reasons such as busy clinic, lack of knowledge & experience and so on.

The negligence towards effective aural rehabilitation services (Hardick, 1977; Rosen, 1967) has prompted us to conduct a survey on the status of AR services provided by audiologist in Malaysia and to find out the underlying reasons for not implementing adequate AR services and ways to overcome the situations.

2.4 RESEARCH QUESTIONS

2.4.1 What is the status of AR practice among audiologists in Malaysia?

2.4.2 Do audiologists have awareness regarding AR services?

2.4.3 What is audiologist's opinions regarding the importance of AR?

2.4.4 What types of AR services provided by audiologists?

2.4.5 How frequent do audiologist provide AR services?

2.4.6 What are the possible reasons for not providing adequate AR services?

2.5 RESEARCH OBJECTIVES

2.5.1 GENERAL OBJECTIVE

General objective of this survey is to determine the status of AR practice among audiologists working in different settings in Malaysia

2.5.2 SPECIFIC OBJECTIVES

2.5.2.1 To determine the awareness of audiologists regarding AR services.

2.5.2.2 To determine audiologists' opinions regarding the importance of AR services.

2.5.2.3 To determine types of AR services provided by audiologists in different work settings.

2.5.2.4 To determine the frequency of providing AR services by audiologists in different work settings.

2.5.2.5 To determine the possible reasons for not providing adequate AR services

CHAPTER 3

RESEARCH METHODOLOGY

3.0 RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

This is a cross-sectional survey study using a questionnaire. The questionnaire was mailed to the respondents with an explanatory cover letter and an envelope with stamp after approval by Research Ethics Committee (Human) USM was obtained. The approval from each director of hospital and manager which employs audiologists was also obtained. The respondents must be a certified audiologist. This survey was also registered with National Medical Research Register (NMRR).

5.2 TARGET GROUP

97 certified audiologists working in Malaysia.

5.3 RESEARCH INSTRUMENTS AND PROCEDURES

The questionnaire was constructed based on the previous studies on AR by Schow, Balsara, Smedley and Whitcomb (1993), Millington (2000), and Prendergast and Kelly (2002). The questionnaire was then validated through face validity procedures. The final and validated questionnaire was written in English. It comprises of three sections which are:

a) SECTION I: PERSONAL DETAILS. It consists of questions regarding respondent's personal details and working experience as an audiologist.