

PARENTAL STRESS AND QUALITY OF LIFE AMONG PARENTS WITH HEARING
IMPAIRED CHILD AND NON HEARING IMPAIRED CHILD

BY

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LIST OF ABBREVIATIONS

ASHA	American Speech-Language-Hearing Association
D'KECEK	Deaf Kids Excellent Centre of Kelantan
Hospital USM	Hospital Universiti Sains Malaysia
KPB	Klinik Pertuturan Bahasa
SLP	Speech Language Pathologist
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization
QOL	Quality of life
WHO-QOL BREF	World Health Organization Quality of Life Measure Abbreviated version

ABSTRACT

Parents are affected when their child is diagnosed with hearing loss. Hearing loss in children will affect parental stress and their quality of life as well. The objective of this study was to examine the differences of the parental stress and quality of life among parents with hearing impaired child and parents with non hearing impaired child from the age of 2 to 6 years old. This study also aims to examine the correlation between parental stress and quality of life among both groups of parents. The participants consisted of two groups; study group and control group. The study group is those parents who send their hearing impaired child for further management with audiologist at Audiology Clinic, *Hospital Universiti Sains Malaysia, D'KECEK* and also further management with Speech Language Pathologist at *Klinik Pertuturan Bahasa, School of Health Sciences, Universiti Sains Malaysia*, and Speech Clinic at *Hospital Universiti Sains Malaysia*. The control group was those parents having children with normal hearing who will be randomly collected from a preschool named "Prasekolah Sekolah Kubang Kerian 3" at Kubang Kerian, Kelantan. For each group, the total participants were also 32 parents (16 mothers and 16 fathers). The data obtained were analysed using independent-T test and Pearson Product Moment Correlation Coefficient. The result indicated that there was significant difference on parental stress among mothers with hearing impaired child and mothers with non hearing impaired child ($p \text{ value} < .05$). However, there was no significant difference on parental stress among fathers with hearing impaired child and fathers with normal hearing child ($p \text{ value} > .05$). The results showed no significant difference on psychological, physical and social domains of quality of life among mothers with hearing impaired child and mothers with non hearing impaired child. However, the statistical analyses indicated that there was a significant different on environment domain of quality of life among mothers of both groups. For

fathers, there was no significant difference on all domains of quality of life among them. This study provides some ideas on parental stress and quality of life among parents with hearing impaired and non hearing impaired child. These informations were important for professionals such as Speech Language Pathologist. The informations help as a guideline for them to understand more about parental stress and quality of life especially among parents of hearing impaired child. This can help the clinicians to provide the suitable advises and counseling to the parents in terms of increasing parenting skills and quality of life as well.

ABSTRAK

Ibu bapa akan dipengaruhi apabila anak mereka didiagnos dengan masalah pendengaran. Masalah pendengaran dalam kalangan kanak-kanak akan mempengaruhi stress dan kualiti hidup ibu bapa mereka. Kajian ini bertujuan untuk mengkaji stres dan kualiti hidup ibu bapa dalam kalangan ibu bapa yang mempunyai anak berumur 2 hingga 6 tahun yang bermasalah pendengaran dan yang tidak bermasalah pendengaran. Kajian ini juga menguji hubungan antara stress ibu bapa dan kualiti hidup ibu bapa dalam kalangan ibu bapa yang mempunyai anak berumur 2 hingga 6 tahun yang bermasalah pendengaran dan yang tidak bermasalah pendengaran. Subjek-subjek kajian terdiri daripada dua kumpulan iaitu kumpulan kajian dan kumpulan kawalan. Kumpulan kajian adalah para ibu bapa yang menghantar anak mereka yang bermasalah pendengaran ke Klinik Audiologi, Hospital Universiti Sains Malaysia, D'KECEK dan juga yang menjalani terapi pertuturan di Klinik Pertuturan Bahasa, Pusat Pengajian Sains Kesihatan, dan Hospital Universiti Sains Malaysia. Kumpulan kawalan terdiri daripada para ibu bapa yang menghantar anak mereka yang tiada masalah pendengaran ke "Prasekolah Sekolah Kubang Kerian 3" di Kubang Kerian, Kelantan. Jumlah para ibu bapa dalam setiap kumpulan adalah seramai 32 orang 16 ibu dan 16 bapa. Data yang diperolehi telah dianalisis dengan menggunakan *ujian Bebas-T* dan *Perkali Pearson Product Moment*. Keputusan analisis menunjukkan perbezaan signifikan ($p < .05$) pada stress ibu antara kalangan ibu yang mempunyai anak yang bermasalah pendengaran dan ibu yang tidak mempunyai anak yang bermasalah pendengaran. Walaubagaimanapun, data analisis menunjukkan tiada perbezaan signifikan ($p > .05$) pada stress bapa antara bapa yang mempunyai anak yang bermasalah pendengaran dan bapa yang tidak mempunyai anak yang bermasalah pendengaran. Kajian ini juga menunjukkan tiada perbezaan signifikan pada psikologikal, fizikal dan sosial dalam kualiti hidup antara

kalangan ibu yang mempunyai anak bermasalah pendengaran dan ibu yang tiada anak bermasalah pendengaran. Namun begitu, data analisis menunjukkan terdapat perbezaan signifikan pada kategori persekitaran dalam kualiti hidup antara ibu dari kedua-dua kumpulan. Bagi kalangan bapa antara dua kumpulan, didapati terdapat tiada perbezaan signifikan dalam kualiti hidup mereka. Kajian ini memberi pengetahuan tentang stres ibu bapa dan kualiti hidup antara ibu bapa yang mempunyai anak bermasalah pendengaran dan ibu bapa yang tidak mempunyai anak yang bermasalah pendengaran. Segala pengetahuan ini adalah penting untuk golongan profesional seperti Pegawai Patologi Pertuturan. Pengetahuan tersebut boleh dijadikan sebagai satu panduan untuk mereka lebih memahami terhadap stres ibu bapa dan kualiti hidup mereka terutama golongan ibu bapa yang mempunyai anak bermasalah pendengaran. Pegawai Patologi Pertuturan dapat memberi nasihat dan kaunseling yang sesuai untuk meningkatkan kemahiran keibubapaan dan kualiti hidup para ibu bapa.

Chapter 1

Introduction

1.1 Background of study

The diagnosis of hearing loss in a child is often a very difficult time for parents with normal hearing (Burger, Spahn, Ritcher & Eissele, 2005). The grieving process undergone by parents of children with hearing loss has been described as being continuous, with trigger events reminding parents of the discrepancies between their expectations for their child and their child's actual performance contributing to ongoing emotional stress (Kurtzer & Luterman, 2003). Parents also face ongoing practical challenges, including an increased number of specialist medical and audiological appointments, appointments with other professionals, and managing the hardware of hearing aids or cochlear implants. Then, when the children are old enough to attend preschool and school, there may be educational challenges, both in terms of the child's rate of progress and with regard to access to appropriate services, particularly for children for whom there may not be an ideal school setting or professional support readily available.

Early childhood deafness presents unique and long-term challenges for parents, including communication difficulties, increased medical or audiological care, and educational challenges (Lederberg & Golbach, 2002). The diagnosis of a hearing loss is a critical event in life with profound effects on parents and the family system. Previous studies showed that parents of children with hearing impairment exhibit high level of stress during and after the diagnosis of hearing impairment in their children (Asberg, Vogel, & Bowers, 2008; Meadow-Orlans, 1994; Popp-Siegel, Sedey, & Yoshinaga-Itano, 2002). Parenting stress has been linked to negative outcomes for both parents and children, including poor attachment, behavior problems, less positive parent-child

interactions, and marital dissatisfaction. According to Asberg, Vogel, and Bower (2008), parents of special needs children often experience excess stress and susceptible to negative outcomes, thus investigations of protective factors are needed.

Previous researchers support (Asberg, Vogel & Bowers, 2008; Meadow-Orlans, 1994; Popp-Siegel, Sedey & Yoshinaga-Itano, 2002) had identified several factors that contribute to parenting stress in parents of deaf children. These factors have included income, age at diagnosis, extent of hearing loss, language abilities, mode of communication, and perceived social. According to Derr, Lim, Choo, Buyniski, and Wiley (2008), over 20% of parents of hearing impaired child in United States reported high levels of stress regarding worrying about child safety, seeing their child frustrated, uncertainty about their child's future, worrying about others taking advantage on their child, and having no time for one's self. Besides that, some studies (eg: Goss, 1970; Konstantares & Lampropolou, 1995; Meadow-Orlands & Kathryn, 1995; Deater-Deckard & Scarr, 1996) concerned about the maternal stress toward their deaf or hard of hearing children. For example, Goss (1970) reported that hearing mother with deaf children was more aggressive, always in tensed and show disagreement, and praise their children lesser compared to the other of normal hearing children. Quitter, Steck and Rouiller (1991) found that four out of five scales of the Symptom-Checklist-90-R (a parental psychic stress measurement instrument which consists 90 items) indicated that there was significant higher level of stress in the mothers with hearing impaired children. Similarly, Popp-Siegel, Sedey and Yoshinaga-Itano (2002) found that parents of children with hearing loss who experience everyday parenting hassles related to their young children who also experienced general feelings of stress, whether attributed to factors in the parent, the child, or the parent- child interactions.

It is given report that parents of children with normal hearing often become more stressed as their child's age increases (Meadow-Orlans, 1994). Thus, it is possible that this could be exacerbated for parents of children with hearing loss. This is due to the increased communication, social, educational, and cognitive demands placed on children as they mature. Moreover, it is also due to the fact that the communication gap between children and their parents often becomes more obvious as communication expectations increase with increasing child age (Konstantareas & Lampropoulou, 1995; Lederberg & Mobley, 1990; Meadow-Orlans, 1994).

For the parents of children with severe hearing impairment, communication is also a great challenge because the parents have to learn new strategies rather than rely on intuitive communication. This process of adaptation can result in disrupted interactions that strain parents and children, which may negatively affect parenting roles. Children's language abilities strongly influence parent-child interactions in both deaf and hearing populations. Parenting stress has been linked to poor child outcomes. Parents of hearing-impaired children with less language report higher levels of parenting stress and perceive their children as being more difficult (Aras, Stevenoic, Vlahoivc, Stevenoic, Kolaric & Kondic, 2014).

Parents experience high stress level may present with a lower degree of quality of life (Mugno, Ruta, D'Arrigo & Mazzone, 2007). Physical and psychological stresses may affect the quality of interactions between parents and children. Parents who experience high levels of stress will display lower levels of positive emotion and show negative perceptions of their child's behavior. In brief, children with hearing impairment will result in higher level of stress among parents. According to Yuen and Li (2003), parents who have children with disabilities are often reported to have physical and psychological distress related to caring for their children, thus affecting

their quality of life. Those parents will have lower quality of life compared to parents of similar backgrounds who had children without disabilities.

The current study was attempted to identify and compare the parental stress level and quality of life of parents with hearing impaired child and parents with non hearing impaired child. It was also to explore how various domains of quality of life are impacted as well as the level of parental stress in two different groups. The outcomes can help in giving better counselling and motivation especially to the parents with hearing impaired child for the intervention. This was because it was believed that lower parental stress level and better quality of life of parents will produce better parental care which will further enhance the well-being of their children.

1.2 Definitions

1.2.1 Hearing Impaired Child

According to Mathers, Smith and Concha (2000), hearing impairment is the most frequent sensory deficit in human populations, affecting more than 250 million people in the world. Consequences of hearing impairment include inability to interpret speech sounds, often producing a reduced ability to communicate, delay in language acquisition, economic and educational disadvantage, social isolation and stigmatisation. It may be worsened by some medical conditions such as hypothyroidism, diabetes, and possibly hyperlipidemia, among others.

Based on American Speech Hearing Association; ASHA (1993), hearing impaired is defined as the result of impaired auditory sensitivity of the physiological auditory system. A hearing disorder may limit the development, comprehension, production, and/or maintenance of speech and/or language. Hearing disorders are classified

according to difficulties in detection, recognition, discrimination, comprehension, and perception of auditory information. Individuals with hearing impairment may be described as deaf or hard of hearing. Moreover, ASHA (1993) also defined deaf as a hearing disorder that limits an individual's aural/oral communication performance to the extent that the primary sensory input for communication may be other than the auditory channel. Hard of hearing is defined as a hearing disorder, whether fluctuating or permanent, which adversely affects an individual's ability to communicate. The hard-of-hearing individual relies on the auditory channel as the primary sensory input for communication. Hearing impairment was classified to be hereditary in etiology, if a genetic cause had been identified or the family history was positive. A permanent hearing impairment ascertained in childhood or young adulthood in one or more first-degree relative was defined to indicate positive family history. Hearing impairment was classified as acquired in those cases, where a known pre- or postnatal cause was identified or three or more perinatal risk factors could be discovered and the family history was negative (Hakli, Luotonen, Bloigu, Majamaa & Sorri, 2014).

1.2.2 Parental Stress

According to Lazarus and Folkman's (1984) stress-coping model, stress is defined as individuals' cognitive evaluation of stress associated with an event or an ongoing situation and individuals' appraisals of specific external and internal resources affecting their coping ability. Parenting stress, suggested to be qualitatively different from stress in other distinct domains (Creasey & Reese, 1996), is defined as the aversive psychological reaction to the demands of being a parent (Deater-Deckard, 1998). Abidin (1995) conceptualized that parental stress stems from three sets of factors: those inherent in the child, those inherent in the parent, and those related to the parent– child interaction. Moreover, according to the contextual model of stress,

researchers must examine stressors embedded within a specific context, including factors related to the child, the family, and the specific tasks and demands that must be mastered for successful functioning (Quittner & DiGirolamo, 1998). Thus, another important aspect in the context of parental stress is the impact of day-to-day child rearing experiences (Crnic & Low, 2002).

Parents' higher stress levels correlated with their child's more severe communication difficulties and parents' less satisfactory relationships with professionals (Zaidman-Zait & Most, 2005). Children's communication difficulties have a negative impact on daily interactions between parents and their children who are deaf (both those with hearing aids and those with cochlear) and lead to frustrations (Freeman, Dieterich, & Rak, 2002; Hintermair, 2000;a). In turn, these every day, problematic transactions might lead to cumulative parental stress.

1.2.3 Quality of Life (QOL)

The World Health Organization (WHO) defines quality of life (QOL) as an individual perception of their position in life in the context of the culture and value systems in which they live in relation to their goals, expectations, standards and concerns (WHOQOL Group, 1996, p.5). Besides that, according to Kyuken et al. (1995), QOL is a broad ranging concept affected by the person's physical health, psychological state, level of independence, social relationship, and their relationship to salient features of their environment. A simple definition for QOL is "how good or you feel your life to be" (Campbell & Atcherson, 2012). Parents' quality of life is closely related to their overall satisfaction of life, mental and health status (Karande & Kulkarni, 2009). Physical state and mental and social functioning are all essential dimensions of quality of life.

1.3 Problem Statement

Parents of children with disorders experienced heightened stress, impaired mental health, sense of devaluation and self-blame, impaired physical functioning, tiredness and exhaustion (Benjak, 2011). Parental involvement has been acknowledged as a key element in assessment and intervention (Murray & Mconald, 1996). However, some of the parents are not actively involved and motivated during the session. They did not give full cooperation with the student clinician or speech and language pathologists in order to give the best therapy to their child. Therefore, in order to have more insight on the situation in Malaysia, the current study was to examine and compare the parental stress and parents quality of life of having hearing impaired child and non hearing impaired child as this can help give some insight on parental motivation for the child's intervention therapy. It also help clinicians in coaching and counselling parents after getting understanding on the parental stress and their quality of life. Moreover, it was hypothesized that lower parental stress level and better quality of life of parents will produce better parental care will result and further enhance the well-being of their children.

1.4 Research Objectives

General Objective: To identify the level of parental stress and quality of life; and compare them among parents with hearing impaired and parents with non hearing impaired child.

Specific Objectives:

1. To identify the level of parental stress and quality of life among parents with hearing impaired and non hearing impaired child.

2. To compare the parental stress among parents with hearing impaired child and non hearing impaired child.
3. To compare the quality of life (physical, environment, social and psychological) among parents with hearing impaired child and non hearing impaired child.
4. To examine the relationship between quality of life and parental stress among parents of hearing impaired child.

1.5 Research questions

1. What is the level of parental stress among parents with hearing impaired child?
2. What is the level of parental stress among parents with non hearing impaired child?
3. What is the level of quality of life among parents with hearing impaired child?
4. What is the level of quality of life among parents with non hearing impaired child?

1.6 Hypothesis

1. There is a significant difference between parental stress among mothers with hearing impaired and non hearing impaired child.
2. There is a significant difference between parental stress among fathers with hearing impaired and non hearing impaired child.
3. There is a significant difference between quality of life among mothers with hearing impaired and non hearing impaired child.
4. There is a significant difference between quality of life among fathers with hearing impaired and non hearing impaired child.
5. There is significant relation between parental stress and low quality of

life among parents with hearing impaired child.

6. There is significant relation between low parental stress and quality of life among parents with non hearing impaired child.

1.7 Significance of study

This study can give some information about parental stress and quality of life among parents with hearing impaired and non hearing impaired child. Those parents in this study with hearing impaired child send their children to attend Speech Language Pathology's and Audiology's services in *Hospital Universiti Sains Malaysia* and *Klinik Pertuturan Bahasa* and D'KECEK, School of Health Sciences, *Universiti Sains Malaysia*.

The results from this study can give an insight on the level of parental stress and quality of life and also the differences between them among the two groups of parents. It also helps as a guideline for clinicians to understand more about parental stress and quality of life especially among parents of hearing impaired child. This can help clinician to provide the suitable advises and counselling to them. This is because high level of parental stress will affect the socio-emotional and behaviour of their hearing impaired children. Moreover, it is hypothesized that lower parental stress level and better quality of life of parents will produce better parental care will result and further enhance the well-being of their children.

Chapter 2

Literature Review

2.1 Parental Stress on hearing impaired child

The diagnosis of a hearing loss is a critical life event for parents, and it is known that high stress experience can arise from it. An extensive body of literature has been published in recent years that focuses on stress in parents who have deaf or hard of hearing children (Hintermair, 2004; Lederberg & Golbach, 2001; Pipp-Siegel, Sedey, and Yoshinaga-Itano, 2002; Quittner, 1991; Quittner, Glueckauf, & Jackson, 1990; Sarant & Garrard, 2013). The results vary, with some studies showing a higher stress level for parents of deaf and hard of hearing children than for parents of hearing children.

Parenting stress is understood to be a mental feeling of "being trapped" by parenting responsibilities and it results from the perception that parenting requirements exceed an individual's resources. Complex parental duties involved in raising a child with a physical or developmental disability with the limitations of personal, physical, and financial resources are antecedents of this response. If a parent senses deficient skills when attempting the tasks of parenting, apprehension for both immediate and future failure in the role of parenting can develop and lead to continual stress (Kiani, Khodabakhsh & Hashjin; 2014).

According to the study done by Falakaflaki and Kalantarkousheh (2013), there was a meaningful difference between the mental health of two studied groups. The study was done at Iran and this research was comparing the outbreak of depression, anxiety, and stress among mothers who have healthy children and those of cochlear implantation children. The samples of the study were consisted of 125 mothers of healthy children and 125 mothers of cochlear implanted children. The participants were

evaluated by using questionnaire. Their findings showed that the amount of stress, anxiety and depression was more in mothers of cochlear implantation children than mothers of healthy children.

Moreover, based on the study by Shyam, Kavita and Govil (2014), they found out that mothers of children with disability were also found to have higher level of parenting stress compared to parents of children without disability. They reported that this might be because of the fact that the children with disability require great amount of time and effort for parenting and care giving. This study was consisted of 125 mothers of children with disabilities and children without disability who were selected from three districts of Haryana state (India) on the basis of non random sampling.

In addition, when the needs of the mothers having children with hearing impairment increased, their level of anxiety also increased in a negative way. This can be supported by the study of the relationship between the needs of mothers who have hearing impairment children and their anxiety levels by Bilsin, Cuhadar and Gov (2015). This descriptive research was carried out to identify the relationship between the needs of those mothers who have hearing impairment children and their state/trait anxiety levels. The study was carried out on mothers of students attending a school for children with hearing impairment located in Gaziantep, Turkey between February and April 2012. The researchers found out that the mothers will contribute to their children's needs depending on how well they can cope with their children's care requirements. Mothers have to cope with their children's requirements in an effective way to establish a successful harmony with their children who have insufficiencies. As their needs for care are satisfied, the anxiety levels of families will indirectly decrease.

However, based on the study of Pipp-Segel, Sedey and Yoshinaga-Itano (2002), it is suggested that stress levels among mothers of children who are deaf or hard of

hearing are not clinically higher than those mothers of normal hearing children. This study included 184 mothers of children with hearing loss. All of the mothers either lived in Colorado or New Mexico and all had normal hearing. Their children who were with hearing loss had underwent early intervention as well. Therefore, the results of this study were encouraging in that given appropriate early intervention services, mothers of children with hearing loss do not exhibit more stress than would be expected from a group of mothers with normal hearing children.

For the parents of children with severe hearing impairment, communication is also a great challenge because the parents have to learn new strategies rather than rely on intuitive communication. This can be supported by the study of Aras, Stevenoic, Vlahovic, Stevenoic, Kolaric and Kondic (2014). They found out that the process of adaptation between parents and children can result in disrupted interactions that strain both parents and children, which may negatively affect parenting roles. They reported that children's language abilities strongly influence parent-child interactions in both deaf and hearing populations. Parenting stress has been linked to poor child outcomes. Parents of hearing-impaired children with less language report higher levels of parenting stress and perceive their children as being more difficult.

Besides that, Lederberg and Mobley (1990) reported that hearing impairment affected the ability of the mother and the child to communicate effectively. According to their study, the impact of child hearing impairment on the mother and children relationship was examined by assessing security of attachment and the quality and quantity of the interaction during free play. The subjects included almost all hearing impaired children enrolled in parent education programs in a major metropolitan area over a 5-year period. As the result, their study showed that hearing impaired children and their mothers were judged to miscommunicate much more frequently than normal

hearing children and their mothers. This miscommunication indirectly affects the quality of life of the parents and the children as well.

Hintermair (2006) had did a research which was been conducted in Germany which involved 200 mothers and 206 fathers with normal hearing children, whereas 13 mothers and 7 fathers with deaf or hard of hearing children. This study was to examine the relevant factors for parental stress experience and socioemotional, the correlation of parental resources, parental stress experience and child socioemotional development, as well as its importance for the education of deaf and hard of hearing children. The results showed that parents who experience less stress had deaf or hard of hearing children with better socioemotional development.

2.2 Parents Quality Of Life

According to Malhotra, Khan and Bhatia (2012), they found out that parents of children with disability showed a significant impairment of quality of life (QOL) as compared to the normal healthy control group. They found that the presence of a child with developmental disability in the family calls for a lot of adjustment on the parents and other family members. This was because parents of child having disability, also at times tend to avoid social situations so that their relatives and friends do not get to know of their child's condition and to avoid the embarrassment they may feel because of child's dependency and behavioural problems. This may have been the cause for parents of children on both the developmental disabilities groups considering their social relationships as non supportive and thus, having lower perceived social quality of life than the parents of normal healthy children.

Moreover, Yuen and Li-Tsang (2003) did a research on exploring the quality of life among parents who have children with or without disabilities. A total of 147 parents were recruited for the study (71 had children with disabilities and 76 had children

without disabilities) using convenience sampling at Hong Kong. They found out that parents of children with developmental disabilities had lower quality of life scores compared to parents of similar backgrounds who had children without disabilities. Besides that, they also found out that in the group of parents with children with disabilities, there were significant correlations between children's functional independence and parents' quality of life in the physical health, psychological health and environmental domains. They suggested that these were due to intensive parental care and support that the disabled children needed. The parents devoted most of their time to taking care of them and therefore had less time and freedom to manage and control their own schedule and plans. The situation can become more severe when the child's level of function gradually deteriorates and they require more intensive care and attention. Thus, this study recommended that suitable intervention should be given to support these parents, to build a social network so that can improve their social life.

In conclusion, there are several studies that study on the parental stress as well as the quality of life among parents with hearing impaired child and non-hearing impaired child. Most of the studies showed that the parental stress was higher among parents with hearing impaired child than parents with normal hearing child. The parental stress will indirectly affect the parents' quality of life as well.

Chapter 3

Methodology

3.1 Research Design

This was a study using questionnaires to examine on parental stress and quality of life among parents with normal hearing child and parents with hearing impaired child. Prior the data collection, an official ethics approval was obtained from Human Ethics Committee of *Universiti Sains Malaysia* and *Hospital Universiti Sains Malaysia*.

3.2 Participants

3.2.1 Population and setting

In the present study, the populations of interest consisted of two groups; study group and control group. The study group was those parents who send their hearing impaired child for further management with audiologist at Audiology Clinic, *Hospital Universiti Sains Malaysia*, D'KECEK and also further management with Speech Language Pathologist at *Klinik Pertuturan Bahasa, Pusat Pengajian Sains Kesihatan*, and *Hospital Universiti Sains Malaysia (HUSM)*. The total participants in the study group were 32 which consisted of 16 mothers and 16 fathers. In order to obtain the overall numbers of hearing impaired patients for the current study, researcher requested for a list of patients who received management or therapy from the audiologists and Speech Language Pathologist in HUSM from the Department of Medical Record, HUSM. From the list, several patients who are fulfilling the inclusion criteria will be selected.

The control group was those parents having children with normal hearing who were been randomly collected from a preschool named "Prasekolah Sekolah Kubang Kerian 3"

at Kubang Kerian, Kelantan. The total participants in the second group were also 32 parents (16 mothers and 16 fathers).

3.2.2 Sample size calculation

The sample size was based on a study of Prakash, Ravichandran, Susan and Alex (2013) and calculated using Power and Sample Size Calculation. The sample size was calculated based on the following information; alpha of 0.05, power of study of 80%, mean difference of 6.28, standard deviation of 8.82. By using comparison of two means options, the sample size required for the study were 32 participants in each group. Study group had 16 mothers and 16 fathers. Control group had 16 mothers and 16 fathers as well.

3.2.3 Participants Recruitment Criteria

The participants were recruited based on the following inclusion and exclusion criteria:

The inclusion criteria of **study group** were:

- i. Married parents with hearing impaired child between ages of 2 years old till 6 years old.
- ii. Hearing impaired child must with alternative hearing instruments (cochlear implant, hearing aids and others)
- iii. Hearing impaired child is diagnosed with moderate, severe, or profound hearing loss in both ears.
- iv. Hearing impaired child is without any additional medical problem or severe behavioral problems.

- v. Total income of the parents must be below RM5000.00.

The inclusion criteria of **control group** were:

- i. Married parents with normal hearing child between ages of 2 years old till 6 years old.
- ii. The child must with no other additional medical problems.
- iii. Total income of the parents must be below RM5000.00.

The exclusion criteria of **study group** and **control group** are:

- i. Deaf or hard of hearing parents
- ii. Divorce or separate family
- iii. Parents who did not stay with their hearing impaired child (for study group) and parents who did not stay with their normal hearing child (for control group).

3.3 Research Instrument

Parental Stress Scale and Parent's Quality of Life questionnaires were used as the instrument in this study. The questionnaires consisted of three parts. Part A consisted of items to identify personal information of the participants. Part B was used to identify parental stress and Part C was used to identify parents' quality of life.

Part A: Demographic Data

Part one of the questionnaire was to obtain the background information of the participants in both study and control groups. The questionnaires consisted of 13 questions which covered gender, race, income, total number of children, and age of child who received further management from audiologist or Speech Language Pathologist. This

information served as a record to the researcher and helped in the evaluation and interpretation of the results. Participants in control group only need to answer those questions from question 1 to 9.

Part B: Parental Stress

Parental stress was defined as a construct representing the combination of child, parent and family characteristics related to parent's appraisal of his or her role as a parent (Everly & Lating, 2002). The questionnaire was made up based on standardized questionnaire from Parental Stress Scale (Berry & Jones, 1995) to measure parental stress level for both mothers and fathers. The Malay – translated version on Parental Stress Scale was obtained from Hasniza Mohd Fauzi (2012) for the purpose of this study. The reliability value of the Malay translated Parental Stress Scale was .73. The questionnaire consisted of 17 items and used a 5-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = indefinite, 4 = agree, and 5 = strongly agree. Total scores were obtained by total up all the items. Higher scores will indicate low level of stress level.

Part C: Parent's Quality of Life (WHOQOL-BREF)

The World Health Organization (WHO) with support from 15 collaborating centres around the world, had developed two instruments for measuring quality of life (QOL) called World Health Organization Quality of Life (WHOQOL)-100, which could be used within the variety of social settings (WHOQOL Group, 1998b). The brief version of WHOQOL-100 which was the WHOQOL-BREF was been used as one of the instrument in this study. It was a self-report questionnaire that comprised of 24 items grouped into 4

domains of QOL including physical, psychological, social relationship and environment with 2 items measuring overall QOL and general health. All items in it used 5-point Likert scales that have a range of 1 to 5 which included; very poor to very good, very dissatisfied to very satisfied, not at all to an extreme amount, not at all to completely and never to always. The four domain scores were scaled in a positive direction in which higher score denoting higher quality of life. For the purpose of this study, the Malay translated version of WHOQOL-BREF that was already translated by Hasanah, Naig & Rahaman (2003) was been used. This Malay translated version had been validated and demonstrated good content validity, test-retest reliability and internal consistency with Cronbach's alpha 0.89.

An example of this item is:

English version: 'How would you rate your quality of life?'

Malay version : ' *Bagaimanakah anda menilai kualiti kehidupan anda?*'

3.4 Data collection

3.4.1 Procedure

In the present study, the participants were two groups of parents (each father and mother) of non hearing impaired child and also those who send their hearing impaired child to Speech Language Pathologist and/or Audiology services in *Hospital Universiti Sains Malaysia, Kubang Kerian, Kelantan* , *KPB* and *D'KECEK*, School of Health Sciences, USM. The study group was parents with hearing impaired child while control group was parents with non hearing impaired child. After obtaining official approval from Human Ethics Committee of USM and Hospital USM, researcher had requested a list of patients who received treatment from Speech Language Pathologist and Audiologist in Hospital

USM and Klinik Pertuturan Bahasa from the Department of Medical Record, Hospital USM. The researcher approached parents of children between 2 years old and 6 years old based on the list. Besides that, the researcher also approached a group of parents of normal hearing children in a preschool named “Prasekolah Sekolah Kubang Kerian 3”. Project Information Sheet and Participant Consent Form had been given to parents before completing the questionnaires. Participants were been informed that the questionnaires were for an academic research and the purpose of the questionnaire was to examine the parental stress level and their life satisfaction. The researcher always available to ensure independent and confidentiality and to provide assistance when necessary.

3.5 Data analysis

Data collected was been analysed using SPSS 20 (PASW Statistics) statistical package. All parameters were tested for normal distribution.

The variables were been analysed using parametric test which was independent t test. The significant difference of parental stress and quality of life among parents of two groups were been tested using independent t test.

The correlation between parental stress and quality of life among two groups were been tested using correlation test. Pearson Correlation test was been used as the sample was normally distributed.

CHAPTER 4

RESULTS

4.1 Reliability of the questionnaire

The reliability value of Malay translated Parental Stress Scale (Hasniza, 2012) and WHOQOL-BREF questionnaires (Hasanah, Naig & Rahaman, 2013) were evaluated using Cronbach's alpha method. The suggested Cronbach's alpha value should be within .70 and .80 for the instrument to be considered reliable (Kaiser, 1974). The Cronbach alpha for the Malay translated Parental Stress Scale questionnaire was .84 which was considered high Cronbach alpha value. For the Malay translated WHOQOL-BREF questionnaire, the reliability value was .89 which was also considered high Cronbach alpha value.

4.2 Demographic data analysis

4.2.1 Demographic Characteristics of the Parents with Normal Hearing Child

As shown in the Table 1, a total of 32 parents (16 fathers and 16 mothers) of normal hearing child participated in this study. Among all the participants, only one father and one mother were Chinese and the rest were Malay (93.8%). Referring to age group, a total of 21.9% participants were classified in the age group of 28 to 30 years old; 25% participants were classified in the age group of 31 to 33 years old, and 37.5% were classified in the group of 34 to 36 years old. A small number of participants (12.5 %) were in the range of 37 to 39 years old and 40 to 42 years old (13.1%).

For the job category, more than half of the participants (59.4%) were working in government sector. Only one of the participants was working in private sector while 18.8% of them were self employed.

Among the male participants, only one of them did not work. One of them was having salary less than RM1000.00 per month and another one was having salary between RM1001.00 to RM1500.00 per month. The total of 21.9% of male participants had salary between RM1501.00 to RM2500.00 per month, followed by 9.4% of them who earned between RM2501.00 to RM3500.00 per month. One male participant earned between RM3501.00 to RM4000.00 per month and the rest of them earned between RM4000.00 to RM5000.00 per month. For the female participants, 15.6% of them work as fulltime housewives (meaning no income), 18.8% earned between RM1501.00 to RM2500.00 per month, and 9.4% earned between RM2501.00 to RM3500.00 per month. The rest of them (15.7%) were having salary between RM3501.00 to RM5000.00 per month.

Table 4.1: Demographic data of parents with normal hearing children

Variables	Fathers (n=16) n (%)	Mothers (n=16) n (%)	Total Group (N=32) n (%)
Age			
28-30	2 (6.3)	5 (15.6)	7 (21.9)
31-33	6 (18.8)	2 (6.3)	8 (25.0)
34-36	5 (15.6)	7 (21.9)	12 (37.5)
37-39	2 (6.3)	2 (6.3)	4 (12.5)
40-42	1 (3.1)	-	1 (3.1)
Race			
Malay	15 (46.9)	15 (46.9)	30 (93.8)
Chinese	1 (3.1)	1 (3.1)	2 (6.3)
Job			
No working	1 (3.1)	5 (15.6)	6 (18.8)
Self employee	3 (9.4)	3 (9.4)	6 (18.8)
Government sector	11 (34.4)	8 (34.4)	19 (59.4)
Private sector	1 (3.1)	-	1 (3.1)
Income			
No salary	1 (3.1)	5 (15.6)	6 (18.8)
Less than RM1000	1 (3.1)	-	1 (3.1)
RM1001-RM1500	1 (3.1)	-	1 (3.1)
RM1501-RM2500	7 (21.9)	6 (18.8)	13 (40.6)
RM2501-RM3500	3 (9.4)	3 (9.4)	6 (18.8)
RM3501-RM4500	1 (3.1)	1 (3.1)	2 (6.3)
RM4501-RM5000	2 (6.3)	1 (3.1)	3 (9.4)

Majority of the couples (59.4%) were having two to three children in each of the families. A number of three couples (18.8%) were having only a child while 21.9% of the couples were having four to five children. Among the children, only one couple was having a child with eczema.

Table 4.2 Demographic data of normal hearing children (N= 32)

Other health problems of the normal hearing children	n (%)
No	30 (93.8%)
Yes	2 (6.3%)
Checking on hearing status	
No	13 (40.6%)
Yes	19 (59.4%)

In overall, majority of the normal hearing children (93.8%) did not have any other health problems. Only two participants (6.3%) were having eczema. There were 59.4% of children were been formally checked on the hearing status before while 40.6% were only underwent for the hearing screening.

4.2.2 Demographic Characteristics of the Parents with Hearing Impaired Child

As shown in the Table 2, a total of 32 parents (16 fathers and 16 mothers) of hearing impaired child participated in this study and all of them are Malay. Referring to age group, one participant was classified in the age group 28 to 30 years old; one participant was classified in the age group of 39 to 41 years old and the age group 42 to 44 years old. Only 6.3% participants were in the age group of 45 to 47 years old. A total of 18.8% participants were classified in the age group of 31 to 33 years old. There were 28.1% of participants were in the age group of 36 to 38 years old and most of the participants (37.5%) were in the age group of 34 to 36 years old.

For the job category, half (50%) of the total participants were self employed. A total of 34.4% of participants were working in government sector while only one was working in private sector. A number of 12.5% of participants reported as no working.