

DEVELOPMENT OF A PARENTING STRESS MEASUREMENT TOOL FOR PARENTS OF CHILDREN WITH COCHLEAR IMPLANTS

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ABSTRACT

Parents of children with hearing loss who use hearing technology, be it hearing aids (ABD) or cochlear implants, are vulnerable to parenting stress. This study aims to develop a measuring instrument that can measure parenting stress in parents with children using cochlear implants in Indonesia. A total of 30 parents of children using cochlear implants were involved in this study. Parenting stress in children with hearing loss is reflected in three aspects, namely parental distress, parent-child dysfunctional relationship, and difficult child. Therefore, the development of measuring instruments is based on these three aspects. Based on the results of statistical tests, the internal consistency reliability was 0.92. Based on this study, the parenting stress measurement tool for parents with children using cochlear implants has met the requirements to be declared as a valid and reliable measuring instrument.

Keywords: measuring device, parents, hearing aid, parenting stress, cochlear implants

1. PREFACE

Every parent wishes to have their children develop following normal growth stages. But in reality, children can experience developmental disorders that are not according to normal growth stages. Parents of children with developmental disabilities are susceptible to stress, which is influenced by the severity of the disorder and the challenges faced in raising children. Abidin explained that parenting is a very complex task and parents are often faced with demanding situations with limited physical and individual resources, especially when dealing with children with developmental disorders, which can make parents, especially mothers, struggle. Stress is a result of the gap between the physical or psychological demands of a situation and individual resources including biological, psychological, or social systems. Parenting is a process that comes from the interaction between parents and children who influence each other. Parenting stress is defined as a representation of a complex process that links between the demands of parenting duties, parental psychology and behavior, the quality of parent-child relationships, and the child's psychosocial adjustment. Parenting stress is considered excessive anxiety and tension that is specifically related to the role of parents and interactions between parents and children. Parents with developmentally impaired children experience stress due to several factors, for example, lack of support from the social environment and delays in children's social skills that lead to behavioral problems. Daily care for developmentally impaired children is also a big challenge that can increase the stress level of parents.

One form of developmental disorder in children is hearing impairment or deafness. Deafness is defined as a condition in which individuals are unable to hear and this can be seen in speech or other sounds, both in terms of frequency and intensity. One of the effects of hearing loss is language delay. Children who experience delays in language development will have difficulty in regulating emotions, attention, and behavior; children also have difficulty expressing their needs

and thus become frustrated and misbehave. Children's behavior problems, lack of support from the social or family environment can be a source of stress for parents with hearing-impaired children. Hearing loss has an impact on delays in children's social and emotional development, this is because children experience delays in understanding information from their environment, so this can be a source of stress for parents. Another source of stress for parents with hearing-impaired children is the pressure to acquire new knowledge and skills related to child development. Parents' perceptions of competence in parenting were also found to be related to stress levels.

The stress that arises in parenting causes parents to become less involved in their children's lives and provide less than optimal stimulation, unable to carry out effective parenting and ultimately has an impact on children's behavior problems, children's language development is slow, experienced a significant decrease in problem-solving ability, lower family satisfaction, and decreased physical health.

Therefore, the stress in caring for children with developmental disorders needs to be measured so that interventions can be carried out better. One tool for measuring parenting stress that is widely applied in research, including with children with hearing loss is the Parenting Stress Index (PSI) developed by Richard Abidin. In the development of PSI, there are three influential aspects in expressing stress in parenting, namely parental distress, parent-child dysfunctional relationship, and difficult child. Parental distress indicates parental stress in their general life and stress that has arisen since having children, parent-child dysfunctional relationship indicates a parental perception that children do not show parental expectations and parental dissatisfaction with interactions with children, whereas difficult child shows perceptions of children's self-regulation abilities that can cause stress.

Parental distress consists of six indicators, namely; a) the feeling of lack of ability to take care of children (sense of competence, b) the feeling of social isolation, c) the feeling of not getting support from a partner (relationship with a spouse), d) the feeling of having to always fulfill children's requests or needs (restriction of role), e) feeling pressure in parenting (depression), and f) health problems that are the impact of parenting (parental health). Parent-child dysfunctional relationship consists of three indicators; namely a) acceptance of the child's condition that is not in line with expectations (acceptability), b) feeling of lack of attachment to the child (parental attachment), and c) feeling that there is no positive reinforcement from the child (child reinforced parent). Difficult child consists of four indicators namely; a) the child's ability to adapt to the environment (adaptability), b) the child always wants to be helped in all activities (demandingness), c) the child often shows negative emotions (mood), and d) the child's condition can be easily disturbed or unable to follow instructions (hyper/distract).

This study aims to develop a measuring instrument that can measure parenting stress on parents of children with cochlear implants in Indonesia. Cochlear implants are one of the hearing technologies that can be used by children with very severe hearing loss. In addition to cochlear implants, hearing technology that can be used by children with hearing loss, generally with mild to severe degrees of impairment, is Hearing Aids (ABD). This study focuses on parents of children with cochlear implants because cochlear implants allow their users to participate in society and get educated to a higher level than what was previously possible for deaf individuals. Cochlear implants surgery in Indonesia has only been carried out since 2009, so information about cochlear implants is not well developed and to the best of the researchers' knowledge, there are very few studies in Indonesia that discuss children using cochlear implants or their impact on their families.

2. RESEARCH METHOD

Research Participants

This study involved 30 parents of children with cochlear implants. Participants were identified from one of the cochlear implant manufacturers and the cochlear implant community. All participants had filled in informed consent as evidence of their willingness to participate in this research.

Research Procedure

A review of the literature on stress on parents with special needs kids especially deafness was carried out. A review was carried out to identify the source of the stress. The review revealed that lack of ability to raise children, lack of social support and partner support, lack of adaptability, the child's social skills, the child's behavior problems, language development delay were the source of parenting stress. The results are also considered the issues faced by parents of children with cochlear implants.

The development of a measuring tool was conducted using the parenting stress aspect proposed by Abidin because it represents the sources of stress for parents with hearing-impaired children. Abidin divided three influential aspects in expressing stress in parenting, namely parental distress, parent-child dysfunctional relationship, and difficult child. Lack of ability to raise children, lack of partner support and social support were considered part of parental distress aspect. Lack of adaptability and the child's social skills were considered part of difficult child aspect. While the child's behavioral problems and language developmental delay impacted not only relationship between the parents and the child, but also to the parents and the child itself.

Parental distress consists of six indicators, namely; 1) sense of competence, 2) social isolation, 3) relationship with a spouse, 4) role restriction, 5) depression, and 6) parents' health. Parent-child dysfunctional relationship consists of three indicators, namely; 1) acceptability, 2) parental attachment, and 3) child reinforced parent. Difficult child consists of four indicators namely; 1) adaptability, 2) demandingness, 3) mood and 4) hyper/distract.

The measuring instrument consists of 39 items (table 1) and the distribution of the parenting stress measuring instrument statement consisted of 26 positive items and 13 negative items. Positive items are the items whose statements support the theme you want to measure, while negative items are statements that do not support the theme you want to measure. To measure the level of stress of parents in parenting, subjects were asked to choose an answer that had been provided based on five (5) point interval data on a Likert scale. The Likert scale starts from very much like me (ss), like me (s), neutral (n), unlike me (ts), and very much unlike me (sts). Answers ss represents a score of five (5), s represents a score of four (4), n represents a score of three (3), ts represents a score of two (2), and sts represents a score of one (1); the opposite applies for the negative item. The average total score is close to five (5) indicating the subject has high stress.

The delivery of the items is known as content validity. Content validity means looking at the suitability between the elements or contents of the measuring instrument and the research construct [16]. After the items have been designed, the content validity of the measuring instrument was tested by sending the design to three experts from Universitas Tarumanagara as part of an expert judgment. The result of the expert judgment showed that the construct of parenting stress met the 39-item standard. The next step was assessing the face validity. The purpose of the face validity is to check whether the scale looks valid by the intended population. The face validity test was conducted on three mothers who had children with cochlear implants.

Next, the questionnaires were given to all participants. Due to the COVID-19 pandemic, online questionnaires were given to the parents. The questionnaires were composed in google form and given to the 30 parents of children with cochlear implants. Construct validity and reliability were examined using Statistical Product and Service Solutions (SPSS), the 26th version.

The construct validity test aims to measure if the items have the theoretical construct of the measured attribute. The validity test was carried out using the corrected item-total correlation. The corrected item-total correlation is used to express the coherence between an item and the other items in a test. Items are declared valid if the value is above 0.3. Cronbach Alpha is used to determine the internal consistency. The questionnaire is said to be more reliable if the value of the internal consistencies is higher.

3. RESULT AND DISCUSSION

Based on the demographic data of the participants, 73% of the participants had a bachelor's degree (S1) education and the rest had a master's degree (S2) and high school education. As many as 63% of participants have children under the age of 4 years, while 37% of children are between the ages of 4-6 years. 87% of children used cochlear implants for no more than 2 years and the rest had used them for 3 years. As many as 87% of children are not yet in school and 13% of children are attending inclusive schools.

The content validity test was conducted by 3 experts in the field resulting in the content validity index (CVI) value of 3.8. CVI is evidence of content validity. Research involving 3 to 5 expert judgments is considered to have good content validity if the CVI value is above 1. Thus, the measuring instrument consisting of 39 items with 26 items as positive items and 13 items as negative items is considered to have good content validity because its value is above 1.

Construct validity is better the more studies use the same measurement procedure. The measuring tool for parenting stress in parents with hearing-impaired children was developed based on aspects of parenting stress by Abidin and has good construct validity because this study developed a measuring tool with aspects of parenting stress that have been widely used by previous studies including among parents of children with hearing loss.

The results of the corrected item-total correlation tests showed that 7 items had a value below 0.3 or invalid. In the parental distress aspect, there are 2 invalid items, namely items number 6 and 13. In the parent-child dysfunctional distress aspect, there are 2 invalid items, namely items number 20 and 21. Meanwhile, in the difficult child aspect, 3 items are not valid, such as numbers 31, 32, and 38. Thus, only 32 items based on the results of statistical tests were declared valid.

The reliability test was conducted with the Cronbach Alpha statistical test to determine the internal consistency reliability. The results of the reliability test were carried out after reducing the invalid items. In the initial stage, there were 39 items, then 7 items were reduced to 32 items. Reliability testing was carried out on 32 items that were considered valid. The result of the statistical test showed that the internal consistency reliability value of the measuring instrument was 0.92. The reliability value for each aspect is 0.85 in parental distress; 0.82 on aspects of parent-child dysfunctional relationship; and 0.82 on the difficult child aspect.

Thus, the measuring instrument for parenting stress on parents of children with cochlear implants consisting of 32 items was valid and reliable. The results of statistical tests also show that all aspects that were designed in the early stages still exist. This shows that the sources of problems that are reflected as aspects of parenting stress are still relevant today.

Table 1
Parenting Stress Scale

Aspect	Indicator	Item
Parental Distress (PD) (Reflects general emotional distress and dissatisfaction with parenting)	1) Subjects feel that they lack the ability to care for children (sense of competence)	1) I am unable to provide care for my child.
		2) I am sometimes unable to cope with problems in my parenting.
		3) I am confident in my ability to take care of children
	2) Subjects feel socially isolated	4) I don't have time to socialize with other parties
		5) I feel that I do not get social support from the community
		6) I have time to socialize and get social support from the community
	3) Subjects feel that they do not get support from their partner (relationship with spouse)	7) I feel that my partner is not providing the support I expected.
		8) I feel that problems with partners often occur since the presence of children.
		9) My partner and I become a team that works well together.
	4) The subject feels controlled by the requests and needs of the child (parental restriction of role)	10) I have to meet the demands and needs of children, so I can't do the things I used to do often.
		11) I have to meet the demands and needs of children, so I can't have time for myself
		12) I can spend time with things that I enjoy, while still meeting the demands and needs of the child.
	5) Subjects feel pressure in parenting (depression)	13) I feel guilty if the child's development is not as expected
		14) I feel guilty about my child's hearing loss

		15) I am happy with my parenting role
	6) The subject feels that there is a health problem that is the impact of parental health.	16) I easily feel tired after completing parenting tasks
		17) I easily feel dizzy or have stomach aches or other pains after completing parenting tasks
		18) Childcare has no impact on my health
Parent-Child Dysfunctional Relationship (P-CDI) (Parent's perception of the child's condition that does not meet parental expectations and dysfunctional interactions between parents and children)	1) The subject feels that the child's condition is not as expected (acceptability)	19) I still haven't fully accepted my child's hearing loss
		20) I feel that my children need more time to get used to new things
		21) I can accept if my child is not as capable as other children
	2) Subjects feel less attached to children (attachment)	22) I feel my child is afraid to be close to me
		23) I feel that my child deliberately does not want to be close to me
		24) I always give physical touch to children, for example in the form of hugging, kissing, and stroking
	3) The subject feels that there is no positive reinforcement from the child (child reinforced parent)	25) My child doesn't do things that make me happy
		26) My child doesn't do things that make me proud
		27) My child makes me happy and proud
Difficult Child (DC) (Characteristics of the child's behavior that makes it difficult for children to self-regulate and behavior that is difficult to control)	1) The ability of children to adapt to their environment (adaptability)	28) In a new environment, my child will feel anxious and cannot be separated from me
		29) My child's adaptability is below the average of other children
		30) My child can adapt to their environment
	2) Children often show negative emotions (mood)	31) My child will be angry or cry if they don't get what they want
		32) My child will remove/throw their implant if their wish is not fulfilled

	33) My child can convey their feelings/thoughts either verbally or non-verbally (gestures)
3) Children find it difficult to follow orders (distractability)	34) My child cannot maintain concentration / attention as expected
	35) My child cannot follow my instructions, either verbally or non-verbally (gestures)
	36) My child can follow my instructions, both verbal and non-verbal instructions (gestures)
4) Children always want to be helped in all activities (demandness)	37) My child cannot do activities independently
	38) My child is more demanding than other children
	39) My child can do activities independently

4. CONCLUSIONS AND RECOMMENDATIONS

This study has shown that the measuring instrument developed to measure parenting stress in parents with children using cochlear implants has met the requirements of validity and reliability. To improve the measuring instrument, it is necessary to involve more research subjects, including parents and children who use hearing aids (ABD). So that in the end, this measuring instrument can be used for all parents whose children use hearing technology.

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REFERENCE

- A. Blank, R. F. Holt, D. B. Pisoni, W. G. Kronenberger, Associations between parenting stress, language comprehension, and inhibitory control in children with hearing loss, *Journal of speech language and hearing research* 63 (2020) 1-13. DOI:10.1044/2019_JSLHR-19-00230.
- A. Kurowska, M. Kózka, A. Majda, 'How to cope with stress?' Determinants of coping strategies used by parents raising children with intellectual disabilities, other developmental disorders and typically developing children. A cross-sectional study from Poland., *Journal of Mental Health Research in Intellectual Disabilities* 14(1) (2021) 23 - 49. DOI:10.1080/19315864.2020.183216.
- A. Pilarska, A. Sekula, Bidirectional dependency of developmental and social difficulties in hearing impaired children on the mother's state anxiety, *Journal of child and family studies* 28 (2019) 744–752. DOI: 10.1007/s10826-018-1300-4.

- E. P. Sarafino, T. W. Smith, *Health Psychology: Biopsychosocial Interaction*, John Willey & Son, 2017.
- F. J. Gravetter, L. B. Forzano, *Research Methods for the behavioral Sciences*, Cengage Learning, 2012.
- F. Mangunsong, *Psikologi dan Pendidikan Anak Berkebutuhan Khusus*, Lembaga Pengembangan Sarana Pengukuran dan Pendidikan Psikologi (LPSP3), 2014.
- J. A. Resch, T. R. Elliott, M. R. Benz, Depression among parents of children with disabilities, *Families, systems, & health* 30(4) (2012) 291-301. DOI: 10.1037/a0030366.
- J. Brooks, *The Process of Parenting*, The McGraw-Hill, 2013.
- J. Coldwell, A. Pike, J. Dunn, Household chaos-links with parenting and child behaviour, *Journal of child psychology and psychiatry* 47(11) (2006) 1116-1122. DOI: 10.1111/j.1469-7610.2006.01655.x.
- J. Sarant, P. Garrard, Parenting stress in parents of children with cochlear implants: Relationships among parent stress, child language, and unilateral versus bilateral implants, *Journal of Deaf Studies and Deaf Education* 19(1) (2013) 85-106. DOI: 10.1093/deafed/ent032.
- Jean, Y. Q., Mazlan, R., Ahmad, M., Maamor, N. Parenting stress and maternal coherence: Mothers with deaf or hard-of-hearing children, *American journal of audiology* 27(3) (2017) 260-271. DOI: 10.1044/2018_AJA-17-0093.
- K. Deater-Deckard, Parenting stress and child adjustment: Some old hypotheses and new questions, *Clinical psychology: Science and practice* 5(3) (1998) 314–332. DOI: 10.1111/j.1468-2850.1998.tb00152.x.
- L. S. Ahern, *Psychometric properties of the parenting stress index - short form*, Thesis, North Carolina State University, 2004.
- M. M. Emam, M. Al-Hendawi, D. G. Ali, Parenting stress and life satisfaction in families of children with disabilities: The mediating effect of social support in three Arab speaking countries, *Journal of Family Studies* (2021). DOI: 10.1080/13229400.2021.1893791.
- R. R. Abidin, The determinants of parenting behavior, *Journal of clinical child psychology* 21(4) (1992) 407–412. DOI: 10.1207/s15374424jccp2104_12.
- T. B. Smith, M. N. I. Oliver, M. S. Innocenti, Parenting stress in families with children with disabilities, *American Journal of Orthopsychiatry* 71 (2001) 257-261. DOI:10.1037/0002/0002-9432.71.2.257.
- Yusoff, M.S.B, ABC of content validation and content validity index calculation, *Education in Medicine Journal* 11(2) (2019) 49–54. DOI: 10.21315/eimj2019.11.2.6.