

## Resilience of Parents of Hearing-Impaired Children – Systematic Review

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### ABSTRACT

**Aim:** The study focuses on describing the current knowledge base related to the resilience of parents of hearing-impaired children, as described in relevant published studies.

**Methods:** The basic framework of our research is evidence-based nursing and the method selected a systematic review. The following variables were monitored: place of research, research method, sample size, sample composition, research objective, monitored variables, proposed interventions, NANDA-International nursing diagnosis.

**Results:** The core sample consisted of 280 articles, of which 26 quantitative studies were selected by using exclusion criteria. It was found that none of the studies dealt with the concept of resilience, neither in their declared objectives nor in the variables.

**Conclusions:** The resources of resilience can only be identified on the basis of a qualitative secondary analysis of the contents of the studied texts.

### KEY WORDS

resilience, parenting, disabled, hearing-impaired, child, EBN, systematic review

### INTRODUCTION

The study aimed at determining whether and how the resilience of the hearing parents of children with hearing impairments is investigated. Systematic review was selected as the research method within the EBN (Evidence Based Nursing) research approach.

Sobotková (cf. 2003, pp. 16) defines family resilience as the ability of a system to maintain or restore balance and harmony in family life, or as positive behaviours, positive interactions, and functional competencies that:

- 1 individual members and the family demonstrate in adverse or stressful circumstances,
- 2 affect the family's ability to maintain its integrity even when exposed to stress and crises,
- 3 facilitate the restoration of harmony and balance within the family.

In the Czech Republic, other terms used that are similar to resilience include hardiness, sense of coherence and self-efficacy.

According to Matějček and Dytrych (cf. 1994, p 23) the period before a child is born is one of the most beautiful times in the life of a man and woman. In their minds, the parents-to-be nurture an image of their future child, enjoying every little detail; and the more intense their expectations, the greater the shock if the

child is born with a birth defect. This is a situation for which parents are not and cannot be prepared. The result is trauma stemming from the hard-to-accept jeopardy to an important value and the strong frustration of disappointed expectations. Stress affects all areas of life and the child's disability is perceived as a complex load (cf. Vágnerová, Strnadová, Krejčová, 2009, pp. 14–15). Compared to other types of disability, an impairment of a child's hearing is a highly specific type of strain.

Hearing enables human beings to receive information that is encoded acoustically. A good hearing is one of the basic prerequisites for the child's development of speech, which is one of the most important information channels. The inability to hear and speak completely isolates the impaired person from their environment. People with hearing disabilities are limited both on the communication and social levels. Throughout history, society has viewed impaired individuals through the lens of prejudice and stereotypes, which are mentioned already in the works of the most prominent Athenian philosophers Plato and Aristotle (cf. Olecká, Ivanová, 2011). A hearing impairment and the related speech handicap still represent a significant disadvantage for the disabled in their interactions with the surroundings. Hearing impairment continues to be seen as a stigma. Those unable to lip-read and speak

are segregated not only from a lot of information they would normally be flooded with but moreover, their interactions are limited to a group of people who e.g. speak the sign language, or the impaired depend on their interpreter. Hearing people often tend to avoid communication with the hearing-impaired as they do not know how to communicate with the deaf. Due to the high demands on professional care for a deaf or severely hearing-impaired child, a hearing loss may be a determining factor for parents when considering relocation or a change of job. This type of disability thus changes the existing family lifestyle in a major way as it affects the lives of the parents more radically than they could have ever imagined. As Hrubý says (cf. 1999, p 41), being a parent of a disabled child is a disability in itself. To handle this difficult life situation, parents need to develop appropriate coping strategies and be resilient. Professionals can render significant assistance, provided they know how.

## METHODS

The key concept of the research was evidence-based nursing (EBN), which is a methodological approach to clinical practice. It has the following four basic components (Žiaková, 2009, p 311):

- 1 Research findings (evidence),
- 2 Values and preferences of the patient,
- 3 Clinical experience of the nurse,
- 4 Availability of means within a particular environment

The concept was derived from evidence-based medicine, whose current principles and framework were developed in the 1960s and 1970s for health sciences. Combining the best scientific evidence with clinical experience, values, and expectations of the patient, it facilitates clinical decision-making (cf. Žiaková, 2009, pp. 310). It involves a quantitative approach to the evaluation of clinical approaches.

The aim of this study is to implement the first component of EBN (evidence identification) in relation to the research project – see the introduction to the study. The research method used was a systematic review, which is a form of scientific communication that summarizes the latest developments in the theory or empirical research of the field (cf. Hendl, 2005, p. 349). It has a clearly defined objective and purpose, and follows a clear and reproducible methodology (cf. Greenhalgh, 2003, p 123). In accordance with Hendl (2005, pp. 353, 355) we treat systematic review as any other empirical research. Its main advantage lies in the consistency and transparency of its development, the identification, critical appraisal and synthesis of primary studies.

Only the primary, quantitative studies were subjected to analysis. Quantitative research is highly regarded in contemporary science (cf. Loučková, 2010, p 34). This approach is ideal for collecting relatively little information from a large number of monitored individuals. Its fundamental advantages include the facilitation of theory testing, generalization of results to the population, relatively fast data collection, provision of accurate numerical data, and, finally, a quick analysis of data where results are independent of the researcher. (Cf. Disman, 2000). Quantitative research is characterized by objectivity. In quantitative research, the researcher applies standardized methods and techniques and the outputs of his/her work are empirically guaranteed and rigorously tested, which ensures high reliability of this approach (cf. Loučková, 2010, p 34).

The basic dataset consisted of all studies on hearing parents of hearing-impaired children. The studies were searched with the help of the following keywords: deaf child, preschool children, cochlear implants, relationship with parents, parents of deaf children, deaf preschoolers, mother, father, emotion, family, problems, hearing impaired, psychological ASPECTS, relationship management, psyche, care, barriers, stress, support, challenges, demands, crisis, education, problems with deaf children, adaptability, Domain NANDA International, Nursing Diagnosis, Nurse, Nursing, NANDA classification, classification, Taxonomy II, deaf-mute, resilience. Various combinations and associations involving all the above keywords were used. The search method narrowed down the basic dataset to studies recorded in the following databases: Academic Research Library, Academic Search Complete, Bibliographia medica Čechoslovaca, Bibliographia medica Čechoslovaca RETRO, Bibliographia medica Slovaca, BiblioMedica CD ROM, BMJ Journals Online Collection, Business Source Complete, CINAHL, Cochrane, Czech National Bibliography, Czech National Bibliography CD ROM – articles, Czech National Medical Library database ([www.nlk.cz](http://www.nlk.cz)), NZO NCO database (<http://www.nconzo.cz/web/guest/home>), EBM Reviews, EBSCO, EMBASE, ERIC – Educational Resource Information Centre, ISI Web of Science, Uniform Information Gate ([www.jib.cz](http://www.jib.cz)), JSTOR, VKOL catalogues (<http://kat.vkol.cz>), Knovel, Lippincott Williams & Wilkins High Impact Collection, Literature Resource Center, MEDLINE, Ovid (MEDLINE, Biological Abstract, Embase, EBM Reviews), Periodicals Index Online (PIO), ProQuest, PsycINFO, PSYINDEX-plus with TestFinder, PubMed, Science Direct, SCOPUS, SocINDEX with Full Text, Sociological Abstracts, Czech Republic Joint Catalogue (<http://sigma.nkp.cz>), joint catalogue of municipal libraries ([www.skat.cz](http://www.skat.cz)),

Springer Link, The Philosopher's Index, Ulrich's International Periodicals Directory, UpToDate Online, Web of Science, Wiley InterScience.

A sample selected from the basic dataset consisted of studies that met the elementary criterion: the studies had to be designed as primary research and be accessible in full text via a Czech library. This group was further narrowed down, eliminating studies that:

- 1 Were carried out based on qualitative methods.
- 2 Focused solely on medical diagnosis and medical interventions.
- 3 Concentrated only on the child as a patient (note: in contrast, studies that were primarily concerned with deaf children as such and mentioned parental problems only marginally were also included – children's problems are the parents' problems).
- 4 Studied the speech development and psychomotor development of children only; this even if they investigated the parents' view of this issue.
- 5 Described school-age children and older (the objective was to monitor only the parents of preschool children).
- 6 Studied children with multiple disabilities.
- 7 Were focused solely on hearing-impaired parents.

The search generated 280 articles that formed the basic dataset of the study. The criteria above then eliminated most of these articles. Of the whole dataset, only 26 papers met the established criteria. These articles were subsequently analyzed and the following variables monitored: the source in which the article had been published, year of publication, place of research, research methods, sample size and composition, research objective, variables, proposed interventions, use of NANDA-International nursing diagnosis.

## OPERATIONALIZATION OF QUANTITATIVE VARIABLES

The source in which the article was published: **This variable identifies the type of publication to publish studies on the issue in question most frequently.**

**Year of publication:** This variable identifies in which year the issue was most studied. Furthermore, the development of the issue was monitored.

**Place of research:** The "place of research" variable was determined from the contents of the paper, in the section where authors describe the characteristics of their research sample. This variable reports from which countries the collected data are. The information is important for the interpretation of quantitative and qualitative data, as the results may be location-specific.

**Research method:** The "research method" variable was determined from the contents of the paper, in the section where the authors describe the methods of their research. Quantitative methods and qualitative methods were monitored separately. Based on this variable, the methods of researching the issue were identified. Investigation focused on the most frequent methods and on which methods were absent from the researched sample. The findings will be used in the design of an empirical research.

**Sample size:** The "sample size" variable was determined from the contents of the paper, in the section where authors characterize their research sample. The data for quantitative research and qualitative research were monitored separately. This variable examined the representativeness and potential for the generalization of the analyzed surveys.

**Sample composition:** The "sample composition" variable was determined from the contents of the paper, in the section where the authors characterize their research sample. The data for quantitative research and qualitative research were monitored separately. Along with the "sample size" variable, this variable examined the representativeness and potential for the generalization of the analyzed surveys.

**Research objective:** The "research objective" variable was determined from the contents of the paper, in the section where authors describe the objectives of their research. With this variable, the objectives of analyzed studies were monitored and compared with each other. The aim was to identify the focus of the research studies.

**Monitored variables:** The "monitored variables" variable was determined from the contents of the paper, either in the section where authors list the monitored variables or these variables were derived from the context of the paper. This variable expands the findings of the "research objective" variable.

**Proposed interventions:** The "proposed interventions" variable was determined from the contents of the paper. This information was typically provided at the end of the paper or was continuously included in the whole text. Based on this variable, basic recommendations were generated within the quantitative analysis, involving the care for parents of hearing-impaired children. These recommendations were also complemented with qualitative research outputs.

**NANDA-International Nursing Diagnoses:** The variable of "NANDA-Int diagnoses" was determined from the contents of the paper. The search focused on any mention of the use of NANDA-Int. nursing diagnoses and its relationship to the researched issue.

## RESULTS (see Table 1)

Most of the studies, 23 in total, use the questionnaire method, while three of these studies complement the questionnaire with child skill and competence tests (cf. 13, 14, 17). This finding does not bring any new information. A questionnaire is one of the most widespread techniques because it is an inexpensive, convenient, and quick method of data collection. The research team of one study (cf. 21) added a focus group to the questionnaire survey, while complementing it with a semi-structured interview method. Using multiple techniques ensures an improved validity of the research. This technique is used in three more studies (cf. 12, 24 and 25), while study 25 uses an interview as a complementary technique to the questionnaire. One study (cf. 16) is based on observation. A total of five studies (cf. 7, 10, 11, 17, 18) validate their quantitative research findings using qualitative methods. This is very positive as the use of one-sided research approaches tends to be viewed negatively in current science, according to Loučková (2010, p 74). Both of these approaches are extremely complementary, and may serve to minimize the disadvantages of using only one of the approaches.

Given the very limited number of potential respondents in the target group, studies address fewer respondents than is usual in quantitative research. A lower number of respondents, however, do not distort the results.

In terms of their stated objective, more than one third of studies deal with parental stress and coping strategies (cf. 3, 5, 6, 8, 14, 15, 18, 22, 23, 25). These studies, nevertheless, do not examine the stress and parental coping strategies in general terms but always in relation to a predetermined variable such as social support, level of the child's communication skills, the family's living conditions, children's behaviour, institutional support or the attitude towards the Cochlear implant surgery. Five studies aim to measure parental satisfaction with the children's post-implant results (cf. 2, 12, 20, 23, 26). Four studies evaluate the care for families of hearing-impaired children and attempt to propose recommendations for optimization (cf. 7, 18, 19, 21). Three studies focus on the quality of life of parents with hearing-impaired children (cf. 9, 11, 22). Three studies describe the decision-making factors that led the parents to have their child undergo the Cochlear implant surgery (cf. 10, 17, 20). Two studies are focused on the comparison of the educational approaches to hearing and deaf children (cf. 4, 13) and one study compares

the means of communication of deaf and hearing mothers with deaf children (cf. 16). Only one study concentrates on identifying parental emotions (cf. 1), and one study identifies the problems that parents of deaf children are faced with (cf. 24). None of the above studies aim to identify family resilience.

The studies monitored a high number of variables. We mention only those of the highest frequency and importance for our purposes. It is worth mentioning that the variables did not deal with resilience either. Over a third of the studies dealt with the communication of a deaf child (cf. 2, 5, 8, 9, 10, 12, 16, 17, 24, 25, 26), evaluation of institutional support, access to local resources, and relationships with professionals (cf. 17, 10, 11, 14, 15, 18, 21, 24, 25, 26), parental stress (cf. 3, 5, 8, 10, 14, 15, 22, 23, 26). Over a quarter of the studies focused on satisfaction with the family life and well-being (cf. 2, 3, 9, 11, 15, 17, 18, 22). The studies also focused on expectations concerning the child's development – in particular in terms of the language (cf. 2, 9, 12, 20, 23, 26), child behaviour (cf. 2, 4, 14, 17, 24, 25), the social and family-based emotional support (cf. 3, 11, 15, 18, 19), social relationships (2, 9, 10, 12, 25), the need to receive quality and timely information (cf. 10, 18, 19, 21), decision-making factors concerning the Cochlear implant surgery (cf. 10, 12, 17, 25). Other variables that are also important in terms of the focus of our research include parental concerns (cf. 10, 24), coping resources (cf. 6, 8), reaction to the diagnosis (cf. 21, 25), parents' needs (cf. 18, 24), cohesion (cf. 23, 25), life change (cf. 1, 26), parental emotions (cf. 1), and the impact of deafness on family life (cf. 11).

At the end of the text, most studies list suggestions for interventions designed to improve the care for parents of hearing-impaired children. From our perspective, the following in particular are of interest: provide parents with enough timely and high-quality information (cf. 2, 6, 7, 10, 19, 25, 26), mediate contact with families with identical impairment (cf. 18), identify needs and provide support (cf. 3, 6, 11, 21, 22), coordinate the care (cf. 2, 7), financial counselling (cf. 18), help parents manage everyday specific problems (cf. 24), involve the father more in the treatment, decisions, rehabilitation, etc. (cf. 1), be sensitive to the concerns, anxieties, and uncertainties of parents, take their problems seriously (cf. 5), be aware of parental tendency to believe in a good outcome (cf. 26), avoid criticism and refrain from attempts to convince parents to lower their expectations (cf. 23, 26).



**Table 1** Summary of analysis findings

Art. no.	article identification	place of research	research method	sample size	sample composition	research objective	variables	proposed interventions
1	Anagnostou, Flora; Graham, John; Crocker, Susan. 2007	UK	questionnaire	53 parents	27 fathers, 26 mothers, all parents of children in an implant programme	identifies the parents' emotions before and after implant, identifies the most distinct emotion, and whether this is gender-dependant	feeling of guilt, sadness, shame, denial, change in the life of parents	involve the father more in the treatment, decision making, rehabilitation, etc.
2	Archbold, S., Tracey, S., O'Neill, C., Lutman, M., Gregory, S. 2008	UK	questionnaire	101 parents	parents of children 3 years after the implant	identify parent satisfaction with the child's post-implant results	communication, general functions, self-sufficiency, well-being, social relations, education, implant impact, support of the child	provide info, coordinate care
3	Asberg, Kia, Vogel, Jennifer, Bowers, Clint. 2008	USA	questionnaire	35 parents	parents of deaf children aged 31–198 months (average age 99 months), primarily mothers, white US citizens	identifying the relationship between parental stress, social support, and the communication method in parents bringing up a hearing-impaired child	parental stress, acknowledged social support, achieved social support, life happiness, perceived adequacy of social support	when working with this population, the perceived social support needs to be evaluated
4	Brubaker, Robert G.; Szakowski, Amy. 2000	USA	questionnaire	76 parents	76 parents, of whom 30 parents of deaf children and 37 parents of hearing children parents of children aged 3 to 8	identify the relationship between the parents' conduct and behavior problems of deaf children	problems in children's behavior, parents' conduct	models of support for parents of difficult hearing children may be applied to the parents of deaf children
5	Burger, T., Spahn, C., Richter, B., Eissele, S., Erwin, L., Bengel, J. 2005	Germany	questionnaire	116 parents	parents of 66 children, 50 (26 mothers) parents of children with hearing aids and 66 parents (35 mothers) of children with implants	identify the stress levels of the parents of deaf children and determine whether it changes during treatment	mental stress, ability to speak and understand spoken word	pay attention to parents' concerns, anxiety, and uncertainty
6	Calderon, R. Greenberg, M. T. 1999	USA, Washington	questionnaire	36 mothers	families communicate fully, children live with parents, children aged 8 to 15	Do mothers have coping resources that predict the results of the mothers and children? Is there a significant link between the mother adaptation indexes and the children's results?	coping resources, results of mothers and children	develop programmes that would provide parents with info on problem management, develop social support networks, help not only in terms of primary care but also acknowledge that the needs change and evolve
7	Fitzpatrick, E., Coyle, D., Duriex-Smith, A., Graham, I., Angus, D., Gaboury, I. 2007	Canada	questionnaire qualitative interviews	48 families	parents of children involved in an intervention programme focused on oral communication, approx 50% with cochlear implant	What are the preferences of parents of intervention services and do these vary between parental groups?	types of services	coordinated care and high quality information distribution are ideal
8	Hintermair, M. 2006	Germany	standardized questionnaires	213 mothers and 213 fathers	93 % mothers and 96 % fathers of children, children aged 4 to 13, mostly without implant	identify the correlation between parental resources, social demographic variables, parental stress, and social-emotional problems of children	stress, social-emotional problem, personal resources, social resources, communication competences	educators should study the communication potential of each deaf child to reach the best communication level
9	Huttunen, K. at all. 2009	Finland	questionnaire	36 parents	parents of children 2 to 3 years after implant	identify the quality of life of these children and their families after implant	communication, general functions, self-sufficiency, well-being, social relationships, education, implant impact, support of a child	0
10	Hyde, M., Punch, R. 2010	East Australia	questionnaire qualitative: semi-structured interviews	247 parents	mostly mothers, primarily hearing, English speaking	study experience with deciding about the implant	desire for oral communication, decision-making period, information sources, satisfaction with professionals, concerns about potential negative impact, decision-making related stress, contact with deaf community, child involvement in the decision-making progress	help acquire information

Art. no.	article identification	place of research	research method	sample size	sample composition	research objective	variables	proposed interventions
11	Jackson, Carla W., Wegner, Jane R., Turnbull, Ann P. 2010	42 regions in USA, mostly Midwest	questionnaire, family quality of life (FQoL) scale  qualitative: analysis of responses to open-ended questions and comments re questions in the questionnaire	207	parents of deaf children aged 0 to 6 (average age 44 months), mostly mothers, white US citizens	identify life quality satisfaction in families with hearing-impaired children and their satisfaction with children's results in communication in order to suggest recommendations for the providers of care for these families	satisfaction with family life, impact of hearing loss on family life, children's results, family support, access to local support institutions (early care centre, speech therapist, etc.)	focus on balancing resilience sources and requirements, support in emotional needs, help to find time and funds
12	Kluwin, T. N., Stewart, D. A. 2000	USA	telephone semi-structured interviews	35 parents	parents of children from the implant programme	identify pre-implant and post-implant communication skills, how they learned about the implant and how they made the decision	motivation, the most important factor in decision-making, implant alternatives, degree of certainty, communication skills, changes in the friends circle, anticipated benefits	0
13	Knutson, JF; Johnson, CR; Sullivan, PM. 2004	USA	questionnaires and tests	106 mothers	57 mothers of deaf children waiting for a decision about implant, 22 mothers not desiring an implant surgery, 27 mothers of hearing children	compare the methods of upbringing hearing-impaired and hearing children	upbringing method	none
14	Kushalnagar, P. et al. 2007	USA	questionnaires and tests	46 deaf children and their parents	all parents are hearing, mostly white, children with implants	identifies the relationship between the child IQ, parental depression, and children's adaptability behavior in implant candidates	child intelligence, child behavior, parental depression, early intervention	0
15	Lederberg, A., Golbach, T. 2002	USA	questionnaire	46 mothers	23 mothers of deaf children and 23 mothers of hearing children aged 22 months, 3 years, and 4 years	identify the impact of child's hearing loss on maternal stress, size of social network, and social support	parental stress index, social support, size of general and professional network, satisfaction with social support, life satisfaction	0
16	Lederberg, Amy R.; Everhart, Victoria S. 1998	USA	observation	40 children with mothers	20 deaf and 20 hearing children with mothers, children aged 22 months and then 3 years	compare the communication of deaf children and their hearing mothers with the communication of hearing children and their hearing mothers – identify how hearing loss affects differences in the communication method	number of utterances, speech, speech quality, vocalization, gestures, mother communication, child communication, touch, visual attention	intervention programmes need to focus on improving conditions for language training either facilitating mother signing or providing intense speech training based on the child's needs
17	Li, YL; Bain, L; Steinberg, AG. 2004.	USA	questionnaires and tests  qualitative: semi-structured interviews	83 parents	parents of children aged 5.5 on average, mostly white US citizens	compare parental decision making, values, beliefs, and preferences in parents who are deciding about the cochlear implant for their child	implant-related decision making, communication, life quality, efforts to avoid the risk, values, preferences of children	0
18	Minchom, S. Shepherd, M., White, N., Hill, J., Lund, P. 2003	Wales	questionnaire  qualitative: semi-structured interviews	45 families	families of children aged 11 and younger	identify the methods of reducing stress and anxiety by improving support and cooperation of institutions, define care provision standards for audiology services	support and information at the time of diagnosis, needs related to speech and communication, need for support, family life, quality of services, information, development of services	support children who want to learn the sign language, provide extra-curricular activities, and help children attend these activities, community activities and swimming lessons, financial counseling, help find hearing-impaired groups and encourage joint activities, coordinate contact with other parents

Art. no.	article identification	place of research	research method	sample size	sample composition	research objective	variables	proposed interventions
19	Most, Tova; Zaidman-Zait, Anat. 2001	Israel	questionnaire	35	6 mothers of children waiting for implant and 29 mothers of children after implant, average child age 57.9 months	develop an intervention programme based on parents' needs	need for information, emotional and social support	develop an intervention programme including an interdisciplinary team headed by a coordinator, the team will provide info on all related problems; provide emotional support, help parents meet with other parents
20	Nikolopoulos, T. P., Lloyd, H., Archbold, S., O'Donoghue, G. M. 2001	UK	questionnaire	43	parents of children after implant	analyse the parents' view of the implant surgery a year before and after the surgery, determine whether it has met expectations	parents' expectations	0
21	Robinshaw, H., Evans, R. 2003	UK	structured and semi-structured questionnaire, focus groups	313 institutions providing services, where members of the staff were addressed; 77 parents	providers of special education and language therapy services, parents participating in focus groups	studies the types of services that seem suitable for families with deaf children aged 0 to 5 in relation to the purposes of the UK government	response of families to timely identification, access to information, perception of the relationship between parents and professionals, value of family-oriented services	info on the coordination of services, continuity of services, as compared to the hearing population, identification of actual needs
22	Spahn, C., Burger, T., Loschmann, Ch., Richter, B. 2004	Germany	questionnaire	94 parents	52 mothers and 42 fathers of 55 children with cochlear implant	identify mental stress and quality of life of parents of children after implant; identify if poorer oral skills correlate with increased stress and poorer quality of life	parental stress, quality of parents' life, well-being	professionals should be aware of higher parental stress, integrate psychological consultations in the therapy, and help manage stress
23	Weisel, A., Most, T., Michael, R. 2007	Israel	questionnaire	64 mothers	mothers of children after implant (9 months to 14 yo)	identifies the relationship between family stress and attitudes to the implant surgery over time – after surgery, up to 3 years from the surgery, and 3 years after surgery	cohesion, adaptability, stress, attitudes, expectations	professionals should help parents to assume realistic expectations of the implant effects as parents tend to exaggerate the benefits of the surgery, and are ultimately disappointed
24	Zaidman-Zait A. 2008	Canada	interview	31 parents	26 mothers and 5 fathers of children with implant	identify the everyday problems of parents of children with implant; identify the relationship between everyday problems, stress, and life satisfaction; identify parents' interpersonal relationships as the basis for problem management	disadvantages of the implant, communication problems, children behavior and their character, socialization, parental role, financial problems, services, a need explain the hearing loss to others and defend the child, concerns about the child's education	an intervention should help parents cope with specific everyday problems such as the child's behavior, struggle using the implant
25	Zaidman-Zait A. 2007	Canada	questionnaire, interview	28 parents	15 mothers and 13 fathers (of whom 12 married couples) of children with cochlear implant	describe and categorize variables that the parents of children with implant consider helpful in stress management	success identification, experience sharing, professional support, family friends, intervention services, speech, personnel resources, acceptance of hearing loss, professional management, belonging to an early intervention community, use of sign language, monitoring the child with implant, support centres, rehabilitation, child characteristic, spouse relationship, support of child care, relations with deaf adults, parents' trust in the decision, financial support	professional approach, provision of information

Art. no.	article identification	place of research	research method	sample size	sample composition	research objective	variables	proposed interventions
26	Zaidman-Zait, Anat, Most, Tova. 2005	Israel	questionnaire	35 mothers	mothers of children aged 0 to 7 who are preparing for an implant (6) or are after implant (29)	studies the mothers' expectations about the development of their deaf children and expectations concerning the implant	ability to communicate, social skills, school results, changes in life, rehabilitation requirements, stress, mothers' expectations, relations with professionals	professionals should emphasize the wide range of post-cochlear-implant results to parents and sufficiently and clearly explain the rehabilitation programme; they should notify parents of the latest research information while realizing that parents tend to hope for a good result; they should avoid criticism and efforts to convince parents to lower their expectations; they should promote professional relations, be ready to recognize communication problems of parents and children and need to be able to assist them

## DISCUSSION

None of the analysed studies dealt with resilience of hearing parents of a hearing-impaired child in their declared objectives or monitored variables. The sources of resilience can only be identified based on a qualitative secondary analysis of the contents of the studied texts. Following this analysis, two important steps need to be taken. First, propose an appropriate research method to carry out primary research and subsequently to implement this research. The performed secondary analysis of data will serve as the basis of this research; it will not only serve to identify elementary hypotheses but can also help in the specification of the monitored variables.

Studying parental resilience and filling the knowledge gap appear more than necessary (see also Olecká, Špatenková, 2012). A disabled child may hardly enhance parental aspirations and everyday situations pose a strain on the parents. A particularly aggravating and, as Matějček puts it, also dangerous factor is an "increased burden on the parents in the form of anxiety and perpetual uncertainty, a strain or even over-strain of stress, unusual work and organizational demands, monotonous activities, and the hardly varied stimuli coming from the child." (Matějček, 2000, p. 11) According to Vágnerová, parents experience trauma that stemmed from the feeling of failure in the parental role and feelings of guilt toward the child. The way a disabled child is treated is very different from the attitude toward a healthy child. Vágnerová draws particular attention to the fact that "parents are at a greater risk of extreme behaviour. On the one hand, the likelihood of a hyperprotective approach increases, while on the other hand, such a child can often be rejected. A change in the requirements and expectations, regardless of any other difference, may affect the mental development

of such a child. In unfavourable circumstances, these attitudes may hinder the child's development unnecessarily. Difficulties and peculiarities of the development of the disabled child's personality, also manifested in problems with social adaptation, tend to be more affected by the parents' inadequate attitudes, i. e. by social factors than by the defect itself" (Vágnerová, 2003, p 22). Positively influencing the parental attitude means positively influencing the child's development too; the ability of healthcare personnel to advise, assist, and sympathise with the difficult life situation of the parents of a disabled child is quintessential for successful treatment of the patient. One of the main tasks of a nurse is to provide support and education. Moreover, nurses often face role expectations of empathy, helpfulness, and understanding. The ability to help manage a crisis in a family, however, requires that the professional is aware of the conditions in which the family has unexpectedly found itself. In order to be able to identify and help saturate the newly emerged needs of parents, the nurse needs to be able to identify the correct nursing diagnosis and determine appropriate interventions that improve the condition, if it is possible. The analyzed texts were searched for nursing diagnoses based on the NANDA-International classification and interventions based on the NIC classification that should be relevant for the work with parents of disabled children. Implementation of these internationally recognized classifications provides comprehensive tools for identifying the unique contribution of nursing in a consistent and measurable format (cf. Brokel, Heath, 2010, p 27). According to Weir-Hughes (2010, p. 38), the use of nursing diagnoses is a key to the future of evidence-based, professionally-managed nursing care. Although the search placed a great emphasis on this classification, none of the analyzed studies were found to use this classification.



To increase the benefits for nursing practice we therefore propose that the subsequent qualitative secondary content analysis uses the NANDA-International terminology in the encoding and interpretation of the data. We assume that the most frequent nursing diagnoses will be in domains 7 Relationships and 9 Stress Management. The incidence of other nursing diagnoses, however, is not precluded.

## CONCLUSION

The study aimed at determining whether and how the resilience of hearing parents of children with hearing impairments is investigated. Systematic review was selected as the research method within the EBN research approach. The basic requirement of the study was therefore to find relevant sources. It is technically impossible to acquire all the topic-related resources that have been written around the world to the date. The primary obstacle is whether the source is entered in one of the searched databases. This limitation was partially saturated by the large number of databases searched, some of which have multiple sources. The amount of studies found also depended on the search method and the keywords entered. This limitation was eliminated by using synonyms and employing professionals who specialize in information retrieval and databases of three libraries, each of which uses different sources and a specific search method.

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