



THE LEVEL OF STRESS AND COPING STRESS STYLES OF POLISH STUDENTS WITH HEARING IMPAIRMENT

Anna K. Czyż

Pedagogical University of Cracow, Poland, Faculty of Education, Institute of Special Needs Education

ARTICLE INFO

Article History:

Received 10th March, 2019

Received in revised form 2nd

April, 2019

Accepted 26th April, 2019

Published online 28th June, 2019

Key words:

Coping Stress, Deaf, Hearing Impairment, Quality of life, Stress

ABSTRACT

The studies explore the specificity of the function of hearing loss pupils. The main purpose of presented research is focused on the stress and coping with the stress of students with profound hearing loss. There were three specific goals of the study: definition of level of the stress, identification styles using in coping with the stress, revealing correlation between stress levels and styles of coping stress.

The study was conducted on a sample of 76 students, aged 16 - 24, 29 females, 47 males. For diagnostic purposes the standardized psychological research tools were used: CISS-Coping Inventory for Stressful Situations and PSS-10 - The Perceived Stress Scale, both in Polish adaptation. An indispensable part of conducting research was usage of prepared films with explanations for questionnaires in Polish Sign Language. For analysis results of research descriptive statistics and non-parametric tests: U- Mann Whitney and ANOVA H -by Kruskal-Wallis as well as analyse of regression were used.

The results of the research indicate, that level of the stress is indifferent. There is no connection between level of stress and gender. The most frequently chosen style for coping with the stress in the sample is avoidance. The least frequent apply style is: concentrating on the task. There are some different between men and women is styles of coping stress. There is statistical significant correlation between level of the stress and style of coping with the stress focused on emotions and task. The results indicate that schoolage pupils with serious hearing impairment have a group-specific styles to deal with stress, simultaneously there is some connection between increasing of level of the stress and intensification of using style concentrated on emotions in coping with the stress and decrease in the orientation of the stress-fighting style to the task.

Copyright©2019 Anna K. Czyż. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Hearing disability in the 21st century was classified as a civilisation disease of highly urbanised countries (80% according to WHO estimates). An increase in the number of people suffering from a variety of types of hearing loss has been observed annually. In 1986 the World Health Organization reported that there are approximately 42 million people with impaired hearing, of which 12 million with bilateral deafness or profound hearing loss. According to WHO data of 2005, the number of people suffering from a hearing impairment has observed a sixfold increase, amounting to 278 million people from all over the world. Currently, according to data of said organisation, the number of people affected by a hearing loss is already more than seven times greater. By confronting the number of people affected by a hearing disability against the possibilities of obtaining specialistic support, it is estimated that only one in forty people with damaged hearing have hearing aid equipment and thus a chance for functioning in the world of sounds (World Health Organization, 2010).

Any damage to the body, perceptual damage in particular, negatively affects the homeostasis of the body. Biopsychosocial development is incomplete, an alternative reality is formed due to the compensation by other senses. In the case of hearing damage, depending on the severity of dysfunction, time it has occurred and where the auditory pathway is damaged, it can affect the emotional and social development, in particular if the impairment results in differences in understanding of the world or in communication (Kaland and Salvatore, 2002; Hindley, 1997; Georgy, 1998; Hillburn, Marini, and Slate, 1997; Desselle and Pearlmutter, 1997).

According to the early understanding of stress and resulting from it later concepts basing mainly on the biological aspects of stress, deficits in auditory perception itself constitute a disturbance to the homeostasis of the body and can also be a factor triggering other stressors that influence the quality of life. In response to stressors, a series of processes occur. Their goal is to restore the optimal state of the individual (Cannon, 1929; Selye, 1956, 1974, 1979 a, b; Wolff, 1953; Everly and Rosenfeld, 1983, 1992). Even though biological explanations of the impact of stress on the body treat about the specific nature of hearing loss in relation to stress, there is still not enough research on explaining stress in people with a damage

*Corresponding author: **Anna K. Czyż**

Pedagogical University of Cracow, Poland Faculty of Education
Institute of Special Needs Education

to hearing organs in relation to contemporary paradigms. Modern theories on stress in human life do not define it universally. There is no sufficient knowledge on the relationship between hearing loss and stress in relational view. As Hobfoll (2006) points out, stress is a sociopsychological phenomenon and is also a factor explaining the existence of other phenomena, including a great number of those of negative nature, such as violence, conflicts, diseases, etc. Stress is a stimulant, an optimising and even a vital factor, not only the body's reaction to a stimulus. Contemporary stress theories take into account the dynamics of processes occurring between an individual and their environment, such as human participation, ways of experiencing stress, ways of coping with different difficult situations, factors connected that change both the reactivity, possibility of solving or the significance of operation of stressors (Lazarus and Folkman, 1999; Hobfoll, 2004). Moreover, nowadays more and more often the understanding of stress goes beyond just one paradigm, as it is an extremely complex phenomenon that should not be explained within the strict framework of a particularly defined reality. Contemporary one-sided attempts at explaining reality are deemed shallow and wrong. One of the theories that treat about stress in a most detailed way (i.e. covering the majority of elements occurring within the phenomenon) is the Lazarus and Folkman theory (1984, 1988). It deals with the specificity of human cognitive reactions to the environment with the use of own resources. In the modern approach to stress, the personal moderators of stress include factors such as: self-esteem and confidence in one's own abilities (Maruszyński 1977), optimism and pessimism (Scheier, Weintraub, and Carver, 1986; Scheier and Carver, 1985, Carter and Gains, 1987; Lazarus, 2000), sense and positioning of control, sense of efficiency, sense of social support, sense of coherence which cannot lack identity integration (Antonovsky, 1979; Menaghan, 1982; Schwarzer and Taubert, 1999). All of these areas are so far very poorly (if at all) researched into in the deaf and hearing impaired, however, the following paper includes an attempt at gathering the existing knowledge based on selected studies of relatively reliable nature.

In the theories of stress in the current trends, stress is emphasized not only as a biological and mental state, what is a condition conditioned by the skills of managing a man in difficult situations. There are three approaches to how to deal with stress - the approach understood as a process, as a strategy and as a style. According to Lazarus and Folkman (1984), the ways of coping with stress require the dynamics of changes, adapting them to individual possibilities and needs and to the requirements of the situation. Styles of coping with stress are most strongly associated with the specifics of individual differences, and the approach to the discussion of ways of coping with difficult situations to the style understood as an individual feature. Thus, it is understood as a re-invariably constant tendency to use different ways of dealing with stress.

The stress and the hearing impairment

Psychological research, in particular in quantitative strategies, in groups of people with damaged hearing is not easy nor popular. Various factors contribute to this fact. The most important include: communication difficulties, the size and availability of a sample population, the diversity of hearing impairment due to its cause, time it has occurred, place in which the tract is damaged and type of hearing loss, as well as

the diversification of the deaf and hard of hearing in terms of the type of prosthesis and possibilities of compensating the damaged organ (Marangos, Stecker, Sollman and Laszig, 2000; Eisen 2009; Estabrooks, 2006). While the place where the damage is mainly implies the choice of the type of prosthesis, with the prosthesis itself being responsible for the quality of the sound, it is the severity of defect, the time it has occurred and the possibility of rehabilitation (including the correcting and compensating impact) that determine whether a deaf person uses speech or other methods replacing or assisting communication. A condition necessary for research involving people with impaired hearing is possessing vast theoretical and practical knowledge of audiophonology, psychology of the deaf and hearing impaired, education of the deaf and hard of hearing, as well as different communication skills allowing for conducting and monitoring of research or providing help during the research. The specificity of a given group of deaf or hard of hearing required the selection and preparation of appropriate research tools. This implies a number of methodological and organisational problems, in many cases the work is very tedious and conducting the research with each respondent individually prolongs its duration. However, it is the only guarantee that the results will be valid. Depending on the time the hearing impairment has occurred and the possibility of correction and compensation, hearing loss can lead to deficits: cognitive and communicative which implicate the perception and understanding of the surrounding phenomena, but also affect the quality of emotional and social functioning, as a response to an otherness in the human-immediate and/or distant environment system, the possibility of adopting social roles, professional and social functions or the level of self-reliance (Gałkowski, Kaiser-Grodecka, and Smoleńska, 1988; Szczepankowski, 1999; Prillwitz, 1996; Stachyra, 2001).

Perceptual disability can contribute to biopsychosocial functioning disorders. It most strongly affects the sphere of social communication whose quality conditions the possibility of correcting the defect and language rehabilitation or the possibility of adopting and accepting alternative and assisting communication, which in transactional theory hinders the exchange of resources leading to experiencing a situation as going beyond the possibility of coping with stress (Lazarus and Folkman, 1984). Additionally, research shows that people who are deaf cannot express themselves verbally and have limited possibilities of expressing emotions (Suaréz, 2000). All of this can contribute to the specific responses in stressful situations, as well as the specifics of experiencing stress.

The human body can perform different functions in going through emotions and physical disorders can give root to various sensations. "The body is our most important object in the world. It serves various functions at the same time: it is an essential element of physical identity, it determines self-esteem and perception of one's own attractiveness, its parts have different importance for different people and are perceived differently in terms of emotional attitude, as well as current social norms regulating the appearance" (Kuczyńska and Janda-Dębek, 2001, p. 160). Studies have shown that psychological functions of the body associated with the emotions experienced can suggest certain styles of dealing with stress (Kuczyńska and Janda-Dębek, 2001). A sudden onset of a hearing loss is classified as one of uncontrolled stressors which cause trauma and trigger negative emotions,

while long-term disability can be interpreted as uncontrolled event leading to the feeling of lack of control over reality resulting from the fact that “we cannot bring about the desired state. Problems stemming from (...) the impossibility of controlling events do not mean-which is a common source of misunderstanding-that the reality is extremely aversive, frustrating or threatening to the self-esteem, but rather that it is not possible to modify it” (Sędek, 2001, p. 234), and the nature of hearing loss, taking into account said impossibility to modify it, influencing the effectiveness of therapeutic activity and successfulness of broadly understood rehabilitation has an undisputed influence on the quality of life of people with damaged hearing (Diller, 2003).

Studies on the sources of stress and ways of coping with it carried out to date show the relationship between the level/severity of hearing loss and the frequency of experiencing stress-the more profound the hearing loss, the more stress is experienced. Furthermore, it is proven that in people with minor hearing loss stress acts as a motivation, while in groups of moderate, significant and profound it significantly demotivates people. No statistically significant correlation between the level of stress and strategies of coping with it has been observed (Janiszewska, Kulik, Sztorc, and Firlej, 2016). Łukasiewicz (2008) states that adolescents with residual hearing are particularly prone to stress, have critical view of themselves, their relationship with the surrounding and outside world. Kurowska and Wieczór-Klein (2011) in turn provide the overview of specific situations in which the deaf are exposed to stress which in fact are situations requiring verbal communication. Respondents mark stress level in personal life as high, it is particularly noticeable in relations with medical personnel. In stressful situations the subjects concentrate mainly on taking the effort to resolve the issue by its cognitive transformation or an attempt at changing the situation. The majority of them tends to fantasize and turn to wishful thinking through which they try to reduce the emotional tension emerging in a stressful situation. Research undertaken by Kobosko (2017) in a group of the prelingual deaf with implants show the relations between a high level of emotional support and the strategy of dealing with stress in the Mini-Cope test oriented at “dealing with something else”, denial and cessation of action. Research shows that the larger the network of social support, the more often the denial-oriented strategy is used. People with prelingual deafness with cochlear implants use active coping with stress less frequently than hearing people, less often turn to psychoactive drugs, but more often apply the strategy of ceasing action (Kobosko, Piłka, Pankowska, and Skarzyński, 2012).

Own research

Objective, purpose, research questions, methods, sample group profile

With the specificity of functioning of the deaf and hard of hearing in mind, an attempt was made to fill the gaps in knowledge on a particular reality, through setting an exploratory goal which was to determine the levels of stress and strategies for coping with it as exhibited by adolescents with damaged hearing. For the purpose of the paper, the following questions were posed:

- What is the level of perceived stress?
- How people with hearing losses deal with stress?

- Does gender differ the results of research on stress levels and coping styles?
- Does the increase in the level of stress correspond to the increase or decrease in the frequency of application of any style?

Due to the lack of reliable research with the participation of deaf and hard of hearing adolescents no hypotheses were posed.

The study is of exploratory and quantitative nature. It was carried out in the postpositivist paradigm (Creswell, 2009). For diagnostic purposes standardized research tools were used: tool for assessing stress level The Perceived Stress Scale by Sheldon Cohen, Tom Kamarck and Robin Mermelstein adapted by Zygfrzyd Juczyński and Nina Ogińska-Bulik from 2012, and CISS - Coping Inventory for Stressful Situations Endler and Parker’a from 1990 adapted by Strelau, Jaworowska, Wrześniewski, Szczepaniak from 2009. The accuracy and reliability of tests was determined in Table 1.

Table 1 Data on the accuracy and reliability of tools

Tool	Accuracy	Reliability of original tools	Reliability of tools in own research
PSS-10	criterion	alfa-Cronbacha 0,86 satisfactory stability (0,65)	alfa-Cronbacha 0,75
CISS	theoretical	alfa-Cronbacha 0,78 - 0,90 satisfactory stability (0,73 - 0,80)	alfa-Cronbacha 0,81

The normality of the distribution of variables and the homogeneity of their variance were preserved, but for analysis results of research the Mann-Whitney U test , H ANOVA-by Kruskal - Wallis test were used as well as analysis of regression. For statistic significance, the p- value level was ≤,05.

Due to the nature of the research group, the author used tools of low degree of difficulty, homogeneous in terms of how to respond to them, built with the use of Likert format, allowing for the use of various forms of aid in understanding the contents of items. Each respondent had the opportunity to use explanations to questions. Those were pre-prepared, pre-recorded hints in Polish Sign Language to be played by the respondent as needed. Research tools had similar research procedures and pattern of answer selection. The respondents had to respond to claims made, evaluate the frequency of occurrence of a given phenomenon or behaviour in regards to themselves.

The research was carried out between January and May of 2017 in regional schools for people with hearing loss in Krakow, Tarnow and Wrocław. Studies were conducted individually or in groups of two or three, according to the respondents’ needs. The research was conducted in a traditional way - using a piece of paper and a pencil, the duration of a session varied between 40 minutes and 2 hours. It needs to be noted, however, that the respondents were always provided with the right amount of time. Due to the possible fatigue of the subjects, if needed they could have stop the study, however, all of those whose questionnaires were analysed had filled them in a single session.

In the study on the perceived level of stress and the styles used to overcome life obstacles took a part 76 students (fluctuation sample), aged 16 - 24, 29 females, 47 males, students of special schools for those with damaged hearing, in the intellectual norm. The research group consisted of young

people studying at upper secondary level (vocational school, technical school, high school and post-secondary school). All the respondents were prelingually profound deafness, used the written form of Polish phonic language at least at a basic level, moreover they were participating in the program of development of sign language. In everyday communication they combined Polish Sign Language with signed Polish.

RESULTS

Summary of results from PSS-10 questionnaire

Research on stress levels show the dominance of average stress level in the sample. Taking into account the specifics of functioning of people with hearing loss it is impossible not to notice that those with an elevated level of stress constitute a large group. In the gender context, distribution, in both subgroups the majority of responses is within the average results (Tables 2,3).

Table 2 Summary of raw data for PSS-10

	Total	Men	Men, reduced sample	Women
M	17,73	17,34	17,29	18,39
Me	18	17	18	17
SD	3,72	3,66	4,34	3,79
N valid	75	47	28	28
Min	10	10	10	11
Max	27	25	25	27
_25%	15	15	14,5	16,5
_75%	20	20	20,5	20

Table 3 Summary of recalculated data for PSS-10

Sten	Interpretation of the qualitative results	Total, N=76		Men, N=47		Men, N=28		Women, N=29	
		N	%	N	%	N	%	N	%
1	very low	0	0	0	0	0	0	0	0
2,3	low	1	1	1	2	1	4	0	0
4	lowed	6	8	5	11	5	18	1	3
5,6	avarage	46	61	26	57	13	46	20	69
7	increased	13	17	10	22	6	21	3	10
8,9	high	9	12	4	9	3	0	5	17
10	very high	0	0	0	0	0	0	0	0

In order to analyze the relationship between the level of stress and gender, a random reduction of the sample of men was made by equating the number of subgroups. Nonparametric test was used for two independent variables. The Mann-Whitney U test did not show the relevance of the relationship (Table 4).

Table 4 The U-test result for stress level and gender

	Sum.rangs men	Sum.rangs women	U	Z	P	Z correct.	P	N valid men	N valid women
PSS -10	757,50	895,50	351,50	-0,860	0,389	-0,87	0,387	28	29

Summary of results from CISS questionnaire

By analysing the results using the CISS test, among five styles of coping with stress, people with damaged hearing use different styles in coping with stress, some of them have more importance in shaping the behavior of subjects, others a bit smaller. And in the core styles with stress, the subjects mainly display a style focused on avoidance, although this trend is more pronounced among women. Women are more involved in substitute activities than in seeking social contacts, while men concentrate more on finding social contacts rather than

committing to replacement activities. The respondents in general sample poorly concentrate on the task, on average on emotions in a difficult situation context (Table 4).

Table 4 Summary of raw data for CISS

	Styles of coping stress				
	SFT	SFE	SFA	ESA	SSC
Total, N valid =75					
M	50,30	41,92	53,57	26,28	16,92
ME	49,5	43	55	26	17
SD	9,77	9,89	9,63	5,99	3,79
Min	29	22	24	8	5
Max	76	67	76	38	25
_25%	44	35	47,5	23	14
_75%	56	49	60	30,5	19,5
Men, N valid =46					
M	49,04	40,63	52,37	26,15	16,22
ME	48,5	41	54	26	16
SD	9,44	9,47	8,65	5,00	3,65
Min	33	22	32	15	5
Max	68	61	70	36	24
_25%	43	34	47	23	14
_75%	56	48	59	30	19
Men, N valid =28					
M	50,21	42,32	51,11	25,79	15,79
ME	48,5	43,5	51	26	16
SD	9,95	9,63	9,68	5,38	3,91
Min	36	25	32	15	5
Max	88	61	70	36	24
_25%	42,5	34,5	44,5	22,5	13,5
_75%	57,5	49,5	60	29,5	18,0
Women, N valid =29					
M	52,45	43,90	55,38	26,34	18,10
ME	50	45	57	27	19
SD	10,23	10,53	11,05	7,44	3,84
Min	29	25	24	8	10
Max	76	67	76	38	25
_25%	46	35	51	24	17
_75%	56	52	61	32	20

SFT - style focused on task; SFE - style focused on emotions; SFA - a style focused on avoidance; ESA - engaging in substitute activities; SSC - the search for social contacts

Table 5 Summary of recalculated data for CISS

Subscale of CISS	Interpretation of the qualitative results	Total, N valid =75		Men, N valid =46		Men, N valid =28		Women, N valid =29	
		N	%	N	%	N	%	N	%
SFT									
1	very low	1	1	0	0	0	0	1	3
2,3	low	31	41	22	48	13	46	9	31
4	lowed	17	23	10	22	6	21	7	24
5,6	avarage	15	20	8	17	3	11	7	24
7	increased	3	4	2	4	2	7	1	3
8,9	high	7	9	4	9	4	14	3	10
10	very high	1	1	0	0	0	0	1	3
SFE									
1	very low	0	0	0	0	0	0	0	0
2,3	low	13	17	9	20	4	14	4	14
4	lowed	14	19	10	22	8	29	4	14
5,6	avarage	33	44	20	43	10	36	13	45
7	increased	11	15	5	11	4	14	6	21
8,9	high	4	5	2	4	2	7	2	7
10	very high	0	0	0	0	0	0	0	0
SFA									
1	very low	1	1	0	0	0	0	1	3
2,3	low	7	9	5	11	5	18	2	7
4	lowed	3	4	3	7	2	7	0	0
5,6	avarage	24	32	18	39	11	39	6	21
7	increased	17	23	9	20	2	7	8	28
8,9	high	21	28	10	22	7	25	11	38
10	very high	2	3	1	2	1	4	1	3

ESA									
1	very low	1	1	0	0	1	4	1	3
2,3	low	3	4	1	2	1	4	2	7
4	lowed	1	1	1	2	11	39	0	0
5,6	avarage	28	37	20	43	6	21	8	28
7	increased	12	16	7	15	7	25	5	17
8,9	high	21	28	14	30	2	7	7	24
10	very high	9	12	3	7	0	0	6	21
SSC									
1	very low	1	1	1	2	1	4	0	0
2,3	low	16	21	12	26	8	29	4	14
4	lowed	16	21	13	28	10	36	3	10
5,6	avarage	32	43	16	35	6	21	16	55
7	increased	5	7	2	4	1	4	3	10
8,9	high	4	5	2	4	2	7	2	7
10	very high	1	1	0	0	0	0	1	3

SFT - style focused on task; SFE - style focused on emotions; SFA - a style focused on avoidance; ESA - engaging in substitute activities; SSC - the search for social contacts

In purpose to determine whether gender differentiates the results of research on styles of coping with stress, the H ANOVA - by Kruskal - Wallis test was used. The results of the test and the level of statistical significance indicate that the factor gender differs the results of the sample of women and men in one style; Women, in the stressful situation more often practice the search for social contacts ($H(1,57) = 5,87, p\text{-value} = ,015$).

Considering the relationship between the level of stress and styles of coping stress, two predictors can be observed, which described 20% of variance of level of stress. First is style focused on task and second is style focused on emotions. There was showed that the increase in the perceived stress is accompanied by an increase concentration on emotions in coping with stress and decrease of concentration on task (Table 6).

Table 6 Summary of regression analyze between level of stress and styles of coping stress

N valid =75	R=,51 R ² =,26 Adjust. R ² =,20 F(5,69)=4,73 p<,0001 Est. error: 3,38					
	b*	Stand. Error b*	b	Stand. Error b	t(69)	p
Intercept			17,89	2,44	7,32	0,000*
SFT	-0,54	0,16	-0,21	0,06	-3,30	0,002*
SFE	0,67	0,15	0,26	0,06	4,53	0,000*
SFA	0,32	0,50	0,13	0,20	0,64	0,522
ESA	-0,39	0,37	-0,24	0,24	-1,03	0,306
SSC	-0,04	0,26	-0,04	0,25	-0,16	0,872

*p-value ≤ ,05

SFT - style focused on task; SFE - style focused on emotions; SFA - a style focused on avoidance; ESA - engaging in substitute activities; SSC - the search for social contacts

Answers to research questions and discussion on the results

Presented results of research provide answers to all the research questions. The stress level in a sample of adolescents with damaged hearing is average. Gender does not differentiate the results. In stressful situations, the respondents most often apply the style focused on avoidance. Seeking social support is more often use by men, with women turning to engaging in substitute activities. There is a connection between level of stress and styles of coping stress. Increase the level of stress is connected with increase of style focused on emotion and decrease of the style focused on the task.

The results of the research show that the means of dealing with the stress allow the majority of respondents to feel it at an average level. This means that the respondents are not exposed to long-term stress, which may affect their quality of

life, lead to health loss or disintegration of personality structures. However, targeting the fight on avoiding confrontation, not facing the source of stress does not allow permanent removal of the stressor. Concentration on emotions in the fight against stress helps to focus thinking on one's own feelings, experiencing emotions like anger, feelings of guilt, tension.

When confronting research results with studies already conducted among the deaf no particularly high level of stress is diagnosed, as suggested by Janiszewska et al. (2016) or Łukaszewicz (2008). Said level is average. Furthermore, no relevant relationship between the gender and the level of stress is observed. It cannot be confirmed that mostly active ways of coping with stress are used, one can observe the use of evasive behaviour as well as avoidance.

CONCLUSIONS

Research results confirm the author's observations of the past couple of years on the functioning of young deaf and hard of hearing. Often appearing behaviour interpreted as resignation, giving up, lack of fight, tiredness, reluctance to continue action, can be a manifestation of avoidance a situation and/or ceasing attempts at changing it. In turn, being accustomed to receiving support from institutions or third parties can result in natural choice of styles focused on seeking social support when dealing with stress. Thus, a certain tendency to depending on others and a lack of decisiveness or taking responsibility for one's own life can be noted. These observations provide grounds for further investigation and research planning, conclusions of which can contribute to designing rehabilitation work aimed at bettering and improving the quality of life of people with damaged hearing. The implications for therapeutic work stemming from the present paper primarily include a review of support and care system for deaf and hard of hearing adolescents, constant monitoring of stress levels and ways of overcoming it, designing educational actions aimed at balancing and optimising energy expenses in dealing with stress.

References

1. Antonovsky, A. (1979). Health, Stress and coping. San Francisco: Jasey-Bass.
2. Cannon, W. (1929). Organisation for Physiological Homeostasis. *Physiological Reviews*, 9 (3): 399- 431.
3. Carver, C. S. and Gaines, J. G. (1987). Optimism, pessimism, and postpartum depression. *Cognitive Therapy and Research*, 11 (4): 449-462.
4. Creswell, J.W. (2009). Projektowanie badań naukowych. Metody jakościowe, ilościowe i mieszane. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.
5. Desselle, D. D. and Pearlmutter, L. (1997). Navigating two cultures: Deaf children, self-esteem, and parents' communication patterns. *Social Work in Education*, 19: 23-31.
6. Diller, G. (2003). Qualification of educational staff working with hearing-impairment children, *Study Letter 6, Comenius 2.1 Action 2003*. <http://www.qeswhic.eu/downloads/letter06pl.pdf> (14.12.2009).
7. Eisen, M. D. (2003). Djournio, Eyries, and the First Implanted Electrical Neural Stimulator to Restore Hearing. *Otology and Neurotology*, 24 (3): 500-506.

8. Estabrooks, W. (Ed.) (2006) Auditory -Verbal Therapy and Practice. Washington, DC: A.G. Bell.
9. Everly G. and Rosenfeld R. (1983). The Nature and Treatment of the Stress Response. A Practical Guide for Clinicians. NY, London: Plenum Pres.
10. Everly G. and Rosenfeld R. (1992). Stress, przyczyny, terapia, autoterapia. Warszawa: PWN.
11. Gałkowski T., Kaiser-Grodecka I. and Smoleńska J. (1988). Psychologia dziecka głuchego. Warszawa: Państwowe Wydawnictwo Naukowe.
12. Georgy, S. (1998). Deaf young people: Aspects of family and social life. In: Marschark, M. and Clark, M.D. (Eds.) Psychological perspectives on deafness. Mahwah, NJ: Lawrence Erlbaum, 2: 159-170.
13. Hillburn, S., Marini, I., and Slate, J. R. (1997). Self-esteem among deaf versus hearing children with deaf versus hearing parents. Journal of the American Deafness and Rehabilitation Association, 30: 9-12.
14. Hindley, P. (1997). Psychiatric aspects of hearing impairments. Journal of Child Psychology and Psychiatry, 38: 101-17.
15. Hobfoll, S.E. (2004). Stress, Culture, and Community. The psychology and Philosophy of Stress. NY, London: Plenum Pres.
16. Janiszewska, M., Kulik, T. B., Sztorc, E., and Firlej, E. (2016). Stres i sposoby radzenia sobie z nim na przykładzie osób z niedosłuchem. Pielęgniarstwo Polskie, 1, 59: 43-48.
17. Kaland, M. and Salvatore, K. (2002). The Psychology of Hearing Loss, The ASHA Leader, 7: 4-15.
18. Kobosko, J. (2017). Spostrzeganie wsparcia emocjonalnego a jakość relacji z innymi ludźmi u osób dorosłych z głuchotą prelingwalną, korzystających z implantu ślimakowego od okresu dorosłości. In: K. Parys, M. Pasteczka, J. Sikorski (Eds.), Teoria i praktyka oddziaływań profilaktyczno-wspierających rozwój osób z niepełnosprawnością. Konteksty indywidualne i środowiskowe. Kraków: Wydawnictwo Uniwersytetu Pedagogicznego, pp. 221-237.
19. Kobosko, J., Piłka, E., Pankowska, A., and Skarżyński, H. (2012). Stress coping strategies of prelingually deaf cochlear implant users implanted in adulthood. The Polish Otolaryngology, 66 (2): 132-137 .
20. Kuczyńska, A. and Janda-Dębek, B. (2001). Psychologiczne aspekty ciała a style radzenia sobie ze stresem, In: Dolińska-Zygmunt, G. (Eds.) Podstawy psychologii zdrowia, Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego, pp. 157-168.
21. Kurowska, K. and Wieczór-Klein, K. (2011). Sense of coherence and styles of coping with stress in people with hearing impairment. Otorinolaryngologia, 10 (1): 42-48.
22. Lazarus, R. S. and Folkman, S. (1999). Stress and Emotions. A New Synthesis. NY: Springer.
23. Lazarus, R. S. and Folkman, S. (1988). Manual for the Ways of Coping Questionnaire. Palo Alto, CA: Consulting Psychologist Press.
24. Lazarus, R. S. (2000). Cognitive-motivational-relational theory of emotion, In: Hanin, Y.L (Ed.) Emotion in Sport, Champaign, IL: Human Kinetics, pp. 39-63.
25. Lazarus, R.S. and Folkman, S. (1984). Stress, appraisal, and coping. NY: Springer.
26. Łukasiewicz, J. (2008). Rozwój emocjonalny dzieci i młodzieży z wadą słuchu, In: Diagnoza psychologiczna osób niesłyszących. Materiały Ogólnopolskiej Konferencji Specjalistycznej, OSW dla Dzieci Niesłyszących. Poznań.
27. Marangos N., Stecker M., Sollmann W.P, and Laszig R. (2000). Stimulation of the cochlear nucleus with multichannel auditory brainstem implants and long-term results: Freiburg patients. The Journal of Laryngology and Otolaryngology, 27: 27-31.
28. Maruszyński, S. (1977). Samoocena a efektywność funkcjonowania. Studia Psychologiczne, 16 (1): 37-52.
29. Menaghan, E.G. (1982). Measuring coping effectiveness. A Panel Analysis of Marital problems and coping efforts. Journal of Health and Social Behaviour, 23 (3): 220-34.
30. Prillwitz, S. (1996). Język, komunikacja i zdolności poznawcze niesłyszących. Warszawa: Wydawnictwo Szkolne i Pedagogiczne.
31. Scheier, M.F. and Carver, C. S. (1985). Optimism, coping and Health: Assessment and Implications of generalized outcome expectancies, Health Psychology, 4: 219- 247.
32. Scheier, M.F., Weintraub, J.K., and Carver, C.S. (1986). Coping with Stress Divergent Strategies of Optimist and Pessimist. Journal of Personality and Social Psychology, 51: 1257-1264.
33. Schwarzem, R. and Taubert, S. (1999). Radzenie sobie ze stresem: Wymiary i Procesy. Promocja Zdrowia. Nauki Społeczne i Medycyna, 17: 72-92.
34. Sędek, G. (2001). Jak ludzie radzą sobie z sytuacjami, na które nie ma rady? In: Kofta M., and Szutrowa T. (Eds.). Złudzenia, które pozwalają żyć, Warszawa: Państwowe Wydawnictwo Naukowe, pp. 226-248.
35. Selye, H. (1956). The stress of life. New York: McGraw-Hill.
36. Selye, H. (1974). Stress Without Distress. Philadelphia: Lippincott.
37. Selye, H. (1979a). The stress concept and some of its implications. In: Hamilton, V. and Warburton, J. (Eds.). Human Stress and Cognition: An Information Processing Approach, Chichester: John Wiley and Sons, pp. 11-32.
38. Selye, H. (1979b). Stress, Health and Disease. Reading: Butterworths.
39. Stachyra, J. (2001). Zdolności poznawcze i możliwości umysłowe uczniów z uszkodzonym słuchem, Lublin: Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej.
40. Suárez, M. (2000). Promoting social competence in deaf students: the effect of intervention program. Journal of Deaf Studies and Deaf Education, 5: 323-336.
41. Szczepankowski, B. (1999). Niesłyszący-głusi-głuchoniemi. Wyrównywane szans. Warszawa: Wydawnictwo Szkolne i Pedagogiczne.
42. Wolff, H. G . (1953). Stress and disease. Springfield: Thomas.
