

Anna Czyż

Uniwersytet im. Komisji Edukacji Narodowej w Krakowie
ORCID: 0000-0002-6145-8061
<https://doi.org/10.26881/ndps.2023.49.11>

The Level of Stress and Coping Stress Strategies of Polish Students with Hearing Impairment

This main purpose of presented research is focused on the stress and coping with the stress of students with profound hearing loss. The studies explore the specificity of the function of hearing loss pupils. The study was conducted on a sample of 92 students, aged 16–19, 43 females, 49 males. For diagnostic purposes the standardized psychological research tools were used. The results of the research indicate, that level of the stress is indifferent, shifted toward higher scores. The most frequently chosen strategy for coping with the stress in the sample is Acceptation, and the most common factor (grouped items) for coping with the stress is Seeking Support. There is no connection between level of the stress and variables: gender, age, level of the hearing loss, type of prosthesis. There is a relation in the sample between variable gender and strategy focused on Planning and strategy focused on Seeking Instrumental Support, variable age and strategies focused on Positive Reevaluation and Cessation of Activities, variable type of prosthesis and strategy focused on Cessation of Activities, variable level of hearing loss a and strategy focused on Seeking Emotional Support and strategy focused on Seeking Emotional Support. Considering the factors for coping with the stress there is a relationship between variable age and a grouping strategy Evasive Behaviour and variable age and a grouping strategy Acceptance.

Key words: stress, deaf, hearing impairment, quality of life, stress

Poziom stresu oraz sposoby jego redukowana u młodych osób z uszkodzonym słuchem słuchu

Tematyka prezentowanych badań skupia się wokół stresu i radzenia sobie ze stresem u uczniów z głębokim ubytkiem słuchu. Badanie przeprowadzono na próbie 92 uczniów w wieku 16–19 lat, w tym 43 kobiety i 49 mężczyzn. Do celów diagnostycznych wykorzystano wystandaryzowane narzędzia badań psychologicznych. Wyniki badań wskazują, że poziom stresu badanych oscyluje wokół wartości przeciętnych, przesuniętych w stronę wyższych. Najczęściej wybieraną strategią radzenia sobie ze stresem w próbie jest Akceptacja, a najczęstszym czynnikiem radzenia sobie ze stresem jest Poszukiwanie Wsparcia. Nie ma związku pomiędzy poziomem stresu a zmiennymi: płeć, wiek, stopień ubytku słuchu, rodzaj protezy. Istnieje związek pomiędzy zmienną płeć a strategią skoncentrowaną na Planowaniu i strategią skoncentrowaną na Poszukiwaniu Wsparcia Instrumentalnego, zmiennym wiekiem a strategiami skoncentrowanymi na Pozytywnych Przewartościowaniu i Zaprzestaniu Działalności, typem protezy a strategią skoncentrowaną na Zaprzestaniu Aktywności, poziomem ubytku słuchu a strategią skupioną na Poszukiwaniu Wsparcia

Emocjonalnego i strategią skupioną na Poszukiwaniu Wsparcia Emocjonalnego. Biorąc pod uwagę czynniki radzenia sobie ze stresem, istnieje związek pomiędzy zmiennym wiekiem i strategią Zachowania unikowe oraz wiekiem i strategią Akceptacja.

Słowa kluczowe: stres, uszkodzony słuch, jakość życia

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, Salvatore 2002; Hindley 1997; Georgy 1998; Hillburn, Marini, Slate 1997; Desselle, 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; Sely 1956, 1974, 1979 a, b; Wolff 1953; Everly, 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 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 rela-

tionship 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, 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, Carver 1986; Scheier, Carver 1985, Carter, 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, 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.

Experiencing stress in the context of 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, 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, 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 & 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, Janda-Dębek 2001: 160). Studies have shown that psychological functions of the body associated with the

emotions experienced can suggest certain styles of dealing with stress (Kuczyńska & 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: 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, 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, Skarżyński 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?
- Which variables cause the level of stress to differ within the sample?
- How people with hearing losses deal with stress?
- Which variables differentiate the ways of coping with stress?

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

In the analysis of own research six variables were taken into account: gender, age, type of prosthesis, level of hearing loss, level of perceived stress, stress management strategies. 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: Mini-COPE – Inventory for Measuring Coping with Stress by Charles S. Carver adapted by Zygfryd Juczyński and Nina Ogińska-Bulik from 2012, and the tool for assessing stress level The Perceived Stress Scale by Sheldon Cohen, Tom Kamarck and Robin Mermelstein adapted by Zygfryd Juczyński and Nina Ogińska-Bulik from 2012. The accuracy and reliability of tests was determined in table 1.

Table 1. Data on the reliability and accuracy of tools

Tool	Reliability	Accuracy
PSS-10	criterion	alfa – Cronbacha 0,86
Mini - Cope	theoretical	Guttman's index 0,87 half reliability 0,86 satisfactory stability indicators of individual scales in the original version approx to 0,70

Source: own elaboration.

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 branches of the Polish Association of the Deaf in Krakow, Lodz, Warsaw, Tarnow, and schools for people with hearing loss in Krakow, Tarnow, Wroclaw and Lubliniec. 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.

Sample profile

In the study on the perceived level of stress and the strategies used to overcome life obstacles 92 students of schools for those with damaged hearing and of Polish Association of the Deaf centers. The sample group varied in gender, age, place of residence, type of prosthesis and the level of hearing loss (table 2).

Table 2. Summary of data on the sample

Categories	N	%	Combined categories	N	%
Gender					
Man	43	46,74			
Woman	49	53,26			
Age					
16	16	17,39	16–17	47	51.09
17	31	33,70			
18	28	30,43	18–19	45	48.91
19	17	18,48			
Place of residence					
Town (till 100 tys. residents)	24	26,09			
City (over 100 tys. residents)	37	40,22			
Village	31	33,69			

Categories	N	%	Combined categories	N	%
Type of prosthesis					
Hearing Aid	45	48,91			
Cochlear Implant	22	23,91			
No	25	27,17			
Level of hearing loss					
Moderate	29	31,52			
Severe	31	33,69			
Profound	32	34,78			

Source: own elaboration.

All the respondents were prelingually deaf, 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. Taking into account gender distribution, in both subgroups the majority of responses is within the average results, more people with an elevated level of stress is observed within the males (tables 3 and 4).

Table 3. Summary of raw results on stress level in the sample in general significant

Gender	N significant	Mean	Sten	Min	Max	25 percentyl	75 percentyl	Standard Deviation	Skewness	Kurtosis
	92	17,30	6	4,00	32,00	15,00	20,00	4,15	0,05	1,56
Man	49	17,02	6	8,00	23,00	15,00	20,00	3,78	-0,58	-0,54
Woman	43	17,63	6	4,00	32,00	15,00	20,00	4,55	2,59	2,59

Source: own elaboration.

Table 4. Summary of calculated results in the sample in general and by gender

Results	Stens	N=92	% for N=92	Female N = 43	%	Male N = 49	%
Low	1-3	2	2,17	1	2,33	1	2,04
Lowered	4	13	14,13	5	11,63	8	16,33
Average	5-6	48	52,17	25	58,14	23	46,94
Elevated	7	23	25,00	7	16,28	16	32,65
High	8-10	6	6,52	5	11,63	1	2,04

Source: own elaboration.

In the analysis of t-student's tests and Kruskal-Wallis H test, taking into account the following variables: age group, gender, type of prosthesis, level of hearing loss, no statistical significance between any of the mentioned variables and the level of stress is noted (table 5).

Table 5. The results of tests of statistical significance between grouping variables and the level of stress

Variable	Test	Results
Gender	t-student's	p= ,486095
Age	t-student's	p= ,572346
Type of prosthesis	Anova by Kruskal-Wallis (H test)	H(3,N=92) = ,2402517 p = ,9708
Level of hearing loss	Anova by Kruskal-Wallis (H test)	H(2,N=92) = 1,749121 p = ,4170

* statistical significance ($p \leq 0,05$)

Source: own elaboration.

Summary of results from Mini-Cope questionnaire

By analysing the results using the Mini-COPE test, among the fourteen strategies of coping with stress, people with damaged hearing most often choose the one aimed at accepting the situation. Slightly less often they opt for a strategy of dealing with something else, then a strategy of Seeking emotional and instrumental support. The least often chosen strategy is the use of psychoactive drugs (table 6). Among women, the most common choice is Seeking instrumental support, then acceptance and dealing with something else, the least common is the use of psychoactive drugs. Men most often choose acceptance, then Seeking emotional support and dealing with something else, and the least often choice is using psychoactive drugs (table 7).

Table 6. Summary of raw results for Mini-COPE 14 strategies of coping with stress

	1. Active Coping With the Stress	2. Planning	3. Positive Reevaluation	4. Acceptance	5. Sense of Humor	6. Return to Religion	7. Seeking Emotional Support	8. Seeking Instrumental Support	9. Dealing with Something Else	10. Denial	11. Discharging	12. Using Psychoactive Drugs	13. Cessation of Activities	14. Blaming Yourself
Mean	1,56	1,72	1,68	1,83*	1,32	1,30	1,76	1,75	1,79	1	1,25	0,45#	1,03	1,19
Median	1,5	1,5	2	2	1,5	1,5	2	2	2	1	1,5	0	1	1
Standard Dev.	0,66	0,73	0,72	0,75	0,84	0,90	0,69	0,82	0,66	0,69	0,75	0,68	0,76	0,71
Min.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max.	3	3	3	3	3	3	3	3	3	2,5	2,5	2,5	3	3
_25%	1	1	1	1,5	0,5	0,5	1,5	1	1,5	0,5	0,75	0	0,5	1
_75%	2	2	2	2,5	2	2	2	2,5	2	1,5	2	1	1,5	1,5

* The most commonly used strategy; # The least commonly used strategy

Source: own elaboration.

Table 7. Summary of raw results for Mini-COPE 14 strategies of coping with stress, by gender

Strategy	Mean in Female	SD	Mean in Male	SD
1. Active Coping with the Stress	1,60	0,66	1,52	0,66
2. Planning	1,90	0,72	1,56	0,72
3. Positive Revaluation	1,76	0,77	1,62	0,68
4. Acceptance	1,90	0,79	1,77*	0,72
5. Sense of Humor	1,37	0,86	1,28	0,84
6. Return to Religion	1,44	0,78	1,18	0,99
7. Seeking Emotional Support	1,79	0,71	1,73	0,68
8. Seeking Instrumental Support	1,97*	0,69	1,56	0,89
9. Dealing with Something else	1,90	0,62	1,69	0,68
10. Denial	1,08	0,66	0,93	0,71
11. Discharging	1,33	0,78	1,18	0,72
12. Using Psychoactive Drugs	0,43#	0,65	0,46#	0,71
13. Cessation of Activities	0,95	0,81	1,09	0,73
14. Blaming Yourself	1,20	0,77	1,18	0,66

* The most commonly used strategy; # The least commonly used strategy

Source: own elaboration.

Among the strategies grouped into seven factors, the strategy focused on Acceptance is used most often for dealing with stress. Seeking Support is chosen slightly less often. The least used strategy from those grouped into factors is Helplessness (table 8).

Table 8. Summary of results for Mini-Cope strategies grouped into factors

N=92	1. Active Coping With the Stress	2. Helplessness	3. Seeking Support	4. Ceasing Action	5. Return to Religion	6. Acceptance	7. Sense of Humor
Mean	1,65	0,89#	1,76	1,35	1,30	1,83*	1,32
Median	1,67	0,83	1,75	1,33	1,50	2,00	1,50
Standard Dev.	0,57	0,51	0,64	0,50	0,90	0,75	0,84
Min.	0	0	0	0	0	0	0
Max.	2,67	2,17	3,00	2,33	3,00	3,00	3,00
_25%	1,33	0,50	1,25	1,08	0,50	1,50	0,50
_75%	2,00	1,17	2,25	1,67	2,00	2,50	2,00

* The most commonly used strategy; # The least commonly used strategy

Source: own elaboration.

In terms of gender distribution identical test results are observed among men and women. The most commonly used strategy is Acceptance, slightly less often Seeking Support, and the least often is Helplessness.

Table 9. Summary of results for Mini-COPE strategies grouped into factors, by gender

Factor	Mean in Female	SD	Mean in Male	SD
1. Active Coping With the Stress	1,75	0,55	1,57	0,58
2. Helplessness	0,86#	0,58	0,91#	0,44
3. Seeking Support	1,88	0,52	1,65	0,72
4. Ceasing Action	1,43	0,51	1,27	0,49
5. Return to Religion	1,44	0,78	1,18	0,99
6. Acceptance	1,90*	0,79	1,77*	0,72
7. Sence of Humor	1,37	0,86	1,28	0,84

Source: own elaboration.

When considering the relationship between variables of gender, age, type of prosthesis, severity of hearing loss and strategies for dealing with stress (Kruskal-Wallis H test and post-hoc analysis using U Manna-Whitneya test) it is apparent that the factor conditioning the selection of a particular strategy is gender: women are more likely to choose a strategy focused on planning and Seeking instrumental support; age: people in the age group of 16–17 years old are more prone to selecting a strategy aimed at Positive Reevaluation and Ceasing Action; type of prosthesis: people using hearing aids significantly more often opt for Ceasing Action than those with no prostheses and the latter in fact choose Ceasing Action far more often than those with implants; severity of hearing loss: people with moderate and significant hearing loss are more likely to turn to the strategy of Seeking Emotional Support than people with profound hearing loss (table 10).

Table 10. Summary of results of research on the relationship between strategies for coping with stress and variables: gender, age, type of prosthesis, severity of hearing loss

Grouping Variable	<i>p</i> - value	post – hoc analyse	Interpretation of relation between factors and strategy
Gender	$p=,0304482$	2: There is a relationship between variable gender and strategy focused on Planning	2: Women more often choose strategy Planning, than men
	$p=,029012$	8: There is a relationship between variable gender and strategy focused on Seeking Instrumental Support	8: Women more often choose strategy Seeking Instrumental Support than men

Grouping Variable	<i>p</i> - value	post – hoc analyse	Interpretation of relation between factors and strategy
Age	<i>p</i> = ,049033	4: There is a relationship between variable age and strategy focused on Positive Revaluation	4: People aged 16-17 more often choose strategy Positive Revaluation than people aged 18-19
	<i>p</i> = ,017024	13: There is a relationship between variable age and strategy focused on Cessation of Activities	13: People aged 16-17 more often choose strategy Cessation of Activities than people aged 18-19
Type of prosthesis	<i>p</i> = ,019546	13: There is a relationship between variable type of prosthesis and strategy focused on Cessation of Activities	13: People using hearing Aids more often choose strategy Cessation of Activities than people not using any hearing device
	<i>p</i> = ,032141		13: People not using any hearing device more often choose strategy Cessation of Activities than people using Cochlear Implants
Level of hearing loss	<i>p</i> = ,022932	7: There is a relationship between variable level of hearing loss a and strategy focused on Seeking Emotional Support	7: People with middle hearing loss level more often choose strategy Seeking Emotional Support than people with profound hearing loss level
	<i>p</i> = ,007047		7: People with severe hearing loss level more often choose strategy Seeking Emotional Support than people with profound hearing loss level

*statistical significance ($p \leq 0,05$)

Source: own elaboration.

When analysing the relationship between variables and the strategies of coping with stress grouped into factors (Kruskal–Wallis H test and post-hoc analysis using U Manna-Whitney test) a statistical significance was observed only in one variable, i.e. age: those in the age group of 16–17 years old when experiencing stress tend to use Evasive Behaviour and Acceptance more often (table 11).

Table 11. Summary of results of research on the relationship between grouping strategies for coping with stress and variables: gender, age, type of prosthesis, severity of hearing loss

Variable	<i>p</i> - value	post – hoc analyse	Interpretation of relation between factors and strategy
Gender	–	–	–
Age	<i>p</i> = ,049217	4: There is a relationship between variable age and a grouping strategy Evasive Behaviour	4: People aged 16–17 more often choose strategy Evasive Behaviour than people aged 18–19
	<i>p</i> = ,049033	6: There is a relationship between variable age and a grouping strategy Acceptance	6: People aged 16–17 more often choose strategy Acceptance than people aged 18–19
Type of prosthesis	–	–	–
Level of hearing loss	–	–	–

* statistical significance ($p \leq 0,05$); – no statistical significance/no analyse post hoc

Source: own elaboration.

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 with an inclination to elevated. Gender does not differentiate the results, as well as the remaining variables, i.e. age, severity of hearing loss, and type of prosthesis do not influence the results.

In stressful situations, the respondents most often apply the strategy focused on Acceptance. Seeking both emotional and instrumental support (ranked second in terms of strategy and first as a factor when the frequency of choice is considered) deserves particular attention. Emotional support is more often utilised by men, with women turning to instrumental support which in fact this is their dominant strategy. The strategy focused on dealing with something else was also ranked high (second overall, third for women and men respectively). The least often used strategy, both overall and with distinction of gender, is Using Psychoactive Drugs and the factor of Exhibiting Helplessness. The research also shows statistically significant relationships between variables and strategies and factors. Statistically women are more likely to opt for Planning and Seeking Instrumental Support, people in the age group of 16–17 years old are more prone to use strategies of Positive Revaluation, Ceasing Action and factors Evasive Behaviour and Acceptance than those in the age group of 18–19 years old. Respondents using hearing aids significantly more often use Ceasing Action than those with no prostheses and the latter in fact choose ceasing action far more often than those

with implants. People with moderate and significant hearing loss are more likely to turn to the strategy of Seeking Emotional Support than people with profound hearing loss.

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, leaning towards elevated at most. Furthermore, no relevant relationship between the level of hearing loss and the level of stress is observed. Rare use of psychoactive drugs in dealing with obstacles is confirmed, as it was also diagnosed by Kobosko et al. (2012, 2017). However, no relationship between said strategy and type of prosthesis or severity of hearing loss exists. It cannot be confirmed that mostly active ways of coping with stress are used, as in the configuration of different variables one can observe the use of evasive behaviour or cessation of action. The strategy of Acceptance, which in fact is of a passive character, also ranks high. Respondents do not tend to fantasize or use wishful thinking, as diagnosed by Kurowska and Wieczór-Klein (2011). However, as the studies have been conducted on different samples (differing mainly in the age span of the respondents), comparisons are tentative. Additionally, the specificity of adolescence can determine the level of stress and ways of overcoming it.

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 accepting 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 strategies focused on Seeking instrumental or emotional 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.

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