

Emotions in the physical activities of Czech students who are deaf or hard of hearing in general and special education

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Abstract:

Positive and negative emotional reactions have been examined in the second stage of elementary school after physical education classes through examinations involving students who are deaf or hard of hearing ($N = 7$, mean of age = 14.43 years, $SD = 1.27$), their hearing classmates ($N = 125$, mean of age = 13.75 years, $SD = 0.97$) and students who are deaf or hard of hearing in schools for the deaf ($N = 32$, mean of age = 15.19 years, $SD = 1.24$). In the evaluation of negative emotional reactions, significantly higher values were found in deaf or hard of hearing students who were included in a general school than in students in schools for the deaf. Differences were found in the dimensions of the feelings of fatigue, frustration, anger, discomfort, negative attitudes towards physical education and sport. The worries of students who are deaf or hard of hearing in mainstream education about communication misunderstandings, delayed reactions to starting an action or worries about damage to their hearing aid in contact sports played in physical education classes manifested themselves in feelings of anxiety and tension.

Key words: physical education, health, leisure time

Introduction

Regular physical activity increases active longevity, improves quality of life and supports the health of individuals of all ages (Blair & Morris, 2009). However, current research indicates a global decline in the physical activity of children, young people and adults (U. S. Department of Health and Human Services, 2000). On the other hand, there are apparent efforts by interested specialists to reverse or at least mitigate this negative trend. These efforts are especially visible in the field of school education where the school environment provides a significant opportunity to introduce children, pupils and students to regular physical activity and a healthy lifestyle (Finn, Johannsen, & Specker, 2002; McWilliams et al., 2009). Skills, habits and attitudes are formed as early as during childhood and, if supported by targeted motivation and reinforcement, they may persist into adulthood (Sallis & McKenzie, 1991; Stewart & Kluwin, 2001). This is why some of the important roles of a school are to support its students' health and lead its students to live a healthy lifestyle both in and out of school.

In contrast to the general awareness of the benefits of physical activity, their involvement in physical activities by students who are D/HH or have any additional disability is much lower (Kosma, Cardinal, & Rintala, 2002). For example, Longmuir and Bar-Or (2000) in their study discovered that young people who are D/HH or disabled (especially with cerebral palsy or muscular dystrophy) have a significantly lower level of habitual physical activity than their peers and there more obstacles to prevent it from happening. As a result of their physical inactivity, children who are D/HH tend to be more overweight in comparison to the majority population (Dair, Ellis & Lieberman, 2006).

Individuals who are D/HH may perceive participation in physical activity as limiting. Tsai and Fung (2005) include the feeling of separateness and difference from mainstream society and the lack of available information among the main factors that impede the participation of students who are D/HH in the context of leisure physical activity. As a result of their information deficit, persons who are D/HH may be disadvantaged with regard to health and having an active exercise regimen compared to the majority of the population (Iezzoni, O'Day, Killen, & Harker, 2004; Pollard & Barnett, 2009). It is particularly important that people who are D/HH and are physically inactive regularly devote some time to physical activity since it significantly helps to improve their quality of life (Nemček, 2014; Nemček & Kručanica, 2014).

In addition, engaging in physical activity is about values, lifestyle, and social interrelationships, including experiencing emotions. The emotions experienced by sport performers in an organizational environment during the past month were tested by Arnold and Fletcher (2015) in the Sport Emotion Questionnaire. For young athletes, McCarthy, Allen and Jones (2013) explored the relationship between emotions, cognitive interference and concentration disruption.

A key success factor in developing a positive attitude towards regular lifelong physical activity is the level of intrinsic motivation in students (Lonsdale et al., 2009). Motivating students to participate in long-term physical activity in their adulthood also depends on their teachers' skills. The issue of intrinsic motivation and emotional relationships with physical education in the majority of the population has been addressed in many studies (Biddle, Wang, Kavussanu, & Spray, 2003; Pekrun, Elliot, & Maier, 2006; Pekrun et al., 2004; Vlachopoulos, Biddle, & Fox, 1997). Personality factors such as intrinsic motivation, self-confidence and a feeling of belonging all significantly contribute to increased participation in physical activities by individuals who are D/HH (Salbu, 2013).

A comprehensive comparative study focusing on the experience/perception of pleasant and unpleasant emotions in physical education by students who are D/HH under the conditions found in general schools, in schools set up specifically for these students and by their hearing peers is still missing.

The aim of this study is to compare the emotional reactions in the physical education of students who are D/HH under conditions found in general schools and schools set up specifically for these students, including their hearing peers.

Methods

Participants

The participants in the study were students who are D/HH in the second stage of general schools (N = 7, mean of age = 14.43 years, SD = 1.27) from seven schools in the Czech Republic. These students were compared with their hearing classmates (N = 125, mean of age = 13.75 years, SD = 0.97) and again with students who are D/HH from three schools for the deaf (N = 32, mean of age = 15.19 years, SD = 1.24).

Whereas students in schools for the deaf usually communicated in sign language, students in general schools mostly used total communication and spoken speech (Table 1). This is especially important because students with moderate to serious hearing loss or with a cochlear implant are most frequently included in general schools (Langer, 2008).

Only those students without a diagnosed combined disability were involved in the research (e.g. mental, visual or physical impairment).

Table 1. Sample demographic information

	N = 7		N = 32	
	n	%	n	%
Gender				
Male	1	14	24	75
Female	6	86	8	25
Parental hearing status				
Both deaf	--	--	2	6
Both hearing	7	100	28	88
Deaf/hearing	--	--	2	6
Degree of hearing loss				
Hard of hearing	2	29	12	38
Practically deaf	3	42	10	31
Deaf	2 CI	29	10	31
Primary mode of communication				
Sign language	--	--	24	75
Spoken speech	2	29	3	9
Total Communication	5	71	5	16

Note. CI – cochlear implant

Procedure

A questionnaire entitled Dimensions of Emotional Reactions in Physical Education was used to assess the emotional reactions of students. The questionnaire was repeatedly verified in studies by Svoboda (1998) and Svoboda et al. (1995).

In the questionnaire, respondents expressed their agreement or disagreement with thirty positive and thirty negative items. These were divided into ten dimensions (D): D1 – a feeling of energy; D2 – a penchant for risk, excitement; D3 – a feeling of relaxation; D4 – a pleasant feeling of mastery, self-confidence; D5 – a positive attitude towards physical education and sports; D6 – a feeling of fatigue; D7 – a feeling of anxiety, tension; D8 – a feeling of frustration, anger; D9 – a feeling of incompetence, discomfort; D10 – a negative attitude towards physical education and sports. Positive responses in dimensions D1–D5 were assessed with one point, i.e. yes = 1, no = 0; only in item no. 21 was the situation opposite. Negative responses in dimensions D6–D10 were assessed with one point, i.e. yes = 0, no = 1.

The researcher explained the purpose of the questioning to the students and the procedure for responding to questions (including the pitfalls of possible ambiguities in responses to negative questions – e.g. I do not have enough energy for all exercises; I do not exercise with great enthusiasm). When completing the questionnaire, the students had the opportunity to directly ask any questions, if they had any. In order to maintain the objectivity of responses among the surveyed students, the questioning took place when the physical education teacher was not present. No methodological changes in relation to the actual completion of the questionnaire were required for the students who were D/HH and who were included in a general school. In schools for the deaf, an approach was adopted to ensure understanding of the questions by students who communicate in sign language. After a prior agreement and explanation of the intent of the study, the questions were interpreted by a teacher who used sign language to whom the students were accustomed. The procedure with all students in the class consisted in going step by step through all items and at the same time checking how well the students understood the question. All students were surveyed for their anamnestic data and preferred leisure activities.

Before data was collected, ethical approval was granted by the university research Ethics Committee. We purposely selected schools in our vicinity. Their prior consent to participating in the study was obtained through legal representatives.

Data analysis

Statistica 10.0 software was used to process data. The data were quantified using positive points for each dimension of the questionnaire and represented in a group via the arithmetic mean. The Mann-Whitney non-parametric U test was used for testing between-group statistical differences. The statistical significance was set to $p < .05$. The resulting values were evaluated in a range from zero to six points where the existence of more than three points suggested a higher level of emotional reaction.

Given the small number of students who are D/HH, a mutual comparison of students who are D/HH in general schools and their classmates, including students in schools for the deaf, were presented together regardless of gender.

Results

Emotional reactions – students in general schools and in schools for the deaf

Positive emotional reactions

The assessment of the dimensions (Fig. 1) indicates that in the monitored schools (general schools, schools for the deaf), students who are D/HH had high point values in their positive emotional reactions. Students in schools for the deaf showed the highest values. The differences, however, were not statistically significant.

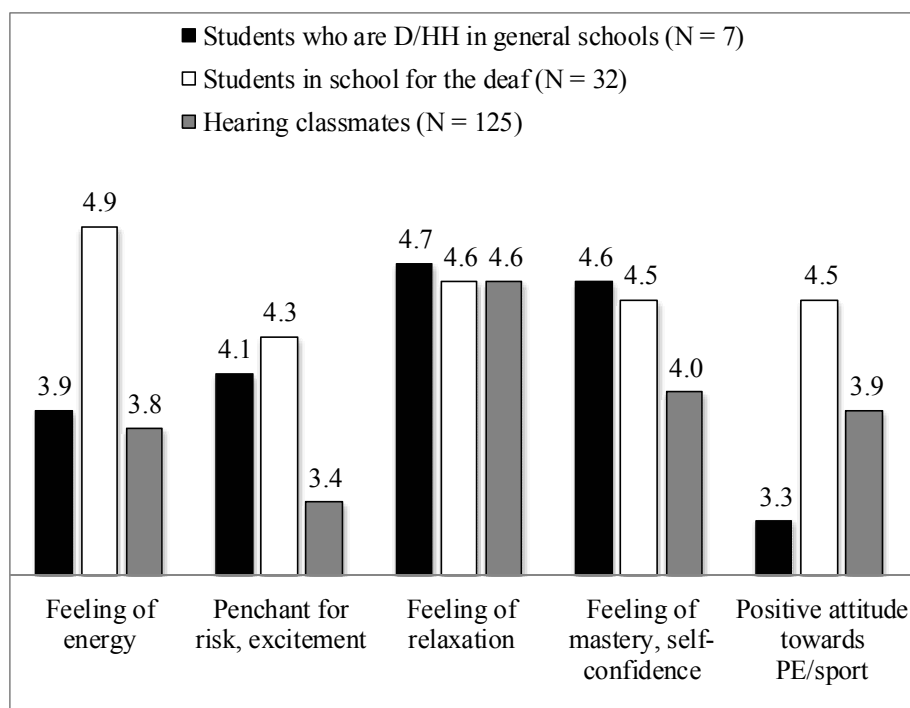


Fig. 1. A comparison of the positive dimensions of emotional reactions of students in general schools and in schools for the deaf

Negative emotional reactions

In the evaluation of the negative dimensions of emotional reactions, the point values of students who are D/HH from general schools were significantly higher than those of the students in schools for the deaf (Fig. 2). Statistically significant differences were shown in the dimension of a feeling of fatigue ($p = .009$), a feeling of frustration, anger ($p = .02$), a feeling of incompetence, discomfort ($p = .001$) and a negative attitude towards physical education and sport ($p = .001$).

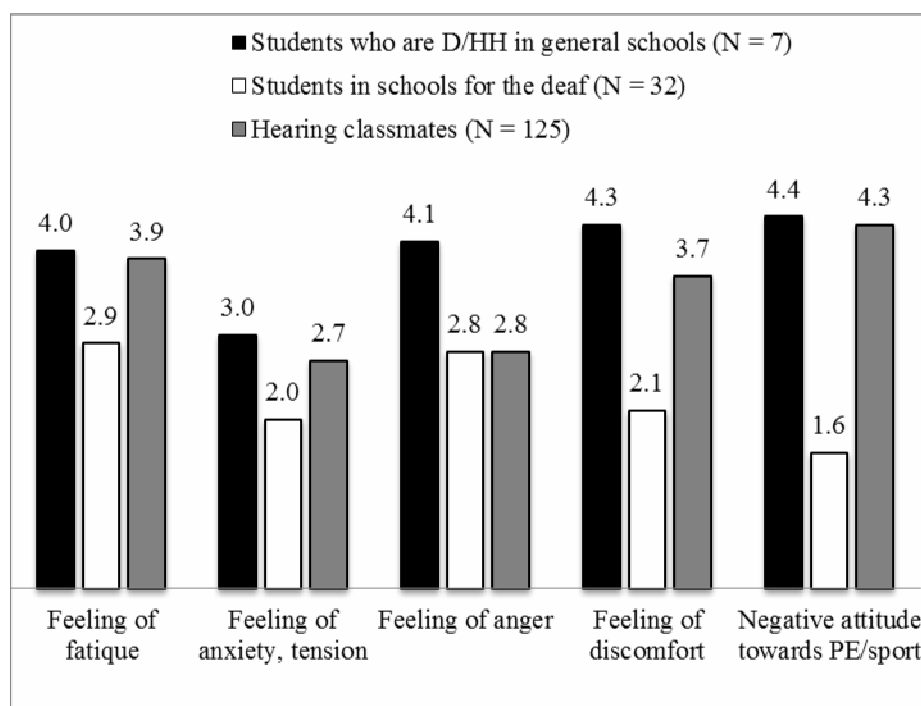


Fig. 2. A comparison of the negative dimensions of emotional reactions of students in general schools and in schools for the deaf

Discussion

The results of standpoint questionnaires in previous partial studies of students who are D/HH showed balanced positive relationships in physical education (Válková, 2003). Students who are D/HH appeared to be trouble-free in physical education classes. Nevertheless, it was discovered that they try to find a place that enables them to better read lips. At the same time, delayed reactions to verbal instructions and copying of the motions of other students in mainstream education were apparent in students who are D/HH. The importance of mutual cooperation between students who are D/HH and their hearing classmates was pointed out in a study by Lieberman, Dunn, Mars, and McCubbin (2000). Their results proved that classmates trained in the communication needs of students who are D/HH significantly support the inclusion of those students in physical education and other physical activities. Successfully-mastered communication within a class (a student who is D/HH, the teacher and hearing classmates) may help ensure that the student who is D/HH feel like they are a part of the class team in a general school and that they perceive no limitations during physical education. But the fact that hearing loss puts high demands on attention (the necessity to read lips, earlier fatigue and excessive noise) needs to be taken into consideration. For example, in situations where a teacher is trying to give instructions during a game while students are making noise, students who use a hearing aid have problems distinguishing the teacher's more distant voice from the loud noises coming by the students who are close by (Best, Lieberman, & Arndt, 2002).

The worries of included students who are D/HH surrounding communication misunderstandings, delayed reactions to starting an action, and worries, if any, about damage to their hearing aid in contact sports performed in physical education manifest themselves as a feeling of anxiety and tension. Due to their hearing loss and associated communication barrier, those students who are D/HH may have limited access to as much experience, which subsequently influences their social, educational, professional, recreational, and psychosocial development (Ellis, Lieberman, & Dummer, 2014; Kurková, Válková, & Scheetz, 2011; Sims, Walter, & Whitehead, 1982; Xie, Potměšil, & Peters, 2014). The importance of adhering to the principles of proper communication during physical activities with students who are D/HH was confirmed in a study of dancers with hearing loss in Square Dancing, where by taking into consideration the special needs of the dancers, they were effectively included in the physical activity (Kurková & Maertin, 2014).

The presented study identified a positive attitude towards physical education by students who are D/HH. Only students in schools for the deaf showed significantly lower values of negative attitudes towards physical education than the students who are D/HH and their hearing classmates in general schools. The negative attitudes

of students towards physical education could be associated with: a) reduced physical fitness (not tested within the study) (Hartman, Houwen, & Visscher, 2011; Jansma & French, 1994); b) school type and curricular focus (Butterfield, van der Mars, & Chase, 1993); c) the personality of the physical education teacher – he/she should possess knowledge that is related to the field and should be trained in the specifics surrounding the process of teaching disabled students (Zaccagnini, 2005).

The education of students who are D/HH in schools that have been specifically established for these students takes place under specific conditions that emerge over time as the facilities develop. Students who do not find it convenient to study at general schools for whatever reason mostly attend schools for the deaf. While the schools for the deaf feature the possibility of accommodation in a hostel and provide quality leisure time management for the students, schools in mainstream education have other positives, the main one being the close proximity to the D/HH student's home.

Conclusions

The education of students who are D/HH in general schools and in schools specially established for such students has its pros and cons that are reflected in physical activities.

Based on the learned results, it can be stated that an adapted environment in physical education (adhering to the principles of proper communication and technological equipment facilitating the orientation of students who are D/HH) may have a positive effect on the experience of students who are D/HH and their hearing classmates. It can be assumed that with a sensitive pedagogical approach, the environment of a general school can be a stimulating factor for the development of an active exercise regimen and can lead to the students living a healthy lifestyle. Most students who are D/HH do not feel that their hearing loss is a disadvantage and therefore, inclusion in physical education classes and leisure activities may not be limiting for them.

Limitations and recommendations of the study

Limitations of the study included the small number of participating schools and students who are D/HH, the absence of knowledge of current physical fitness and the overall health condition of the surveyed students. Another limitation was the variability of communication preferences of those students who were D/HH and also the absence included students in general schools whose primary manner of communication was sign language. Therefore, we recommend that the following procedures be applied in subsequent studies: a) include both qualitative and quantitative approaches where the combination of both methods could provide more detailed information on the attitude of students who are D/HH towards physical education and all factors that surround participation in physical education; b) focus on students who are deaf (users of sign language), hard of hearing and users of cochlear implants; c) take into consideration the manner of communication between these students, their teacher and classmates during physical education classes, in relation to their emotional reactions; d) conduct a longitudinal study on the further development of students who are D/HH.

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