



Journal of Exceptional People

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Institute of Special Education Studies
Faculty of Education – Palacký University Olomouc



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Introduction

Dear readers,
we are publishing the current issue of our magazine in a rather exceptional time, when the whole world is plagued by the Covid 19 pandemic. However, this time not only brings negative connotations, but is also a mirror of dedication and responsibility, and requires increased levels of solidarity from people. And this is a very positive aspect of all contemporary world events.

Our editorial staff is pleased that even at this time of limited human possibilities, we were able to present a number of interesting Czech and foreign contributions on various topics with a special pedagogical focus.

We publish these articles in the order they came to us as well as according to the dates of our reviews.

Introductory scientific paper by Chinese authors (Tang Jiayi, Li Xiu) reports on research “to study the relationship between turnover intention, job satisfaction and professional identity of Chinese special education teachers.” In the next article by four Czech authors we find information about music therapy experiment in patients with dementia (L. Dohnalová, T. Fürst, J. Fürstová, J. Luska). A team of authors from our University of Olomouc introduces the reader in the next article about “patients from dynamic and cognitive-behavioral groups perceive dramatherapy” (J. Olejníčková, M. Valenta, J. Maštalíř, M. Růžicka, J. Kantor, J. Vávra). The article entitled “Analysis of psycho-educational assessment for learners with learning disabilities in the city of Brno, Czech Republic” was prepared by an international team consisting of J. Athiende, (Australia) K. Pančocha, (Czech Republic), M. Murugami and J. Muthee, Kenya.

Another contribution by Slovak author T. Tóthová focuses on the assessment of children’s inclusion in “kindergartens” in Slovakia and the world.

An interesting area is concerned in another article by four Czech authors. Their contribution analyzes the importance of humor in dramatherapy (J. Vávra, M. Valenta, T. Lakota, M. Šochmanová). Scientific articles and review studies in this issue concludes the contribution by the Slovak author K. Tomanková concerning “cochlear implantation influence vestibular function and balance control”.

At the end of the scholarly part of our magazine we publish four interesting reviews of books with special educational topics, which we recommend especially for reading to all who work in the field of special education. The final chapter concerns, as usual, instructions for those of you who would like to contribute to the content of the next issue of our magazine, which will be released this autumn.

Nice reading
Pavel Svoboda, Jan Chrastina, executive editors of JEP
Olomouc, May 1, 2020

The relationship of turnover intention, professional identity and job satisfaction of special education teachers in Chengdu of China

(scientific paper)

Tang Jiayi, Li Xiu

Abstract: *In this study, questionnaire survey was used to study the relationship between turnover intention, job satisfaction and professional identity of Chinese special education teachers. The results are as follows: The average scores of turnover intention are generally low, but still 18.71%, special education teachers tend to leave; the professional identity and job satisfaction of special education teachers is negatively correlated with turnover intention; “Employment Nature, Professional Emotion, Professional Belief, Leadership” are the strongest predictor of turnover intention.*

Keywords: *special education teachers, turnover intention, professional identity, job satisfaction*

1 Introduction

Special education teachers are the foundation of the development of special education and the key to improve the quality of special education. In 2012, the ministry of education of China promulgated *the opinions on strengthening the construction of teachers in special education*, which clearly stated that “the goal of meeting the needs of special schools for the teachers should be realized, and by 2020, a contingent of special education teachers with sufficient numbers and reasonable structure will be formed. *2017 National Statistical Report on Education Development* shows that 578,800 children with special needs are receiving education, and 274,800 children in special schools. However, there are only 56,000 full-time teachers in special schools, accounting for 85.9% of the total teachers, and the student-teacher ratio in special schools is 4.22:1. Furthermore, the research finds that the student-teacher ratio in special education schools in China has shown a sharp upward trend in the past dec-

ade (Wang Yan & Zhu Nan, 2015). A national survey data shows that teachers in most special education schools in China are insufficient. 72% schools in east China, 77% schools in middle China and 82% schools in west China are unable to meet the teaching needs for the number of teachers (Wang Yan & Wang Zhiqiang, 2012). It can be seen that the number of special education teachers in China is seriously insufficient.

Some studies have found that the loss of special education teachers in China is not optimistic either. The difficulty in recruitment and the loss have become the threat factors restricting the development of special education in China (Chai Jiang & Wang Jun, 2014). In the case of a serious shortage of special education teachers, if the phenomenon of dimission cannot be effectively alleviated, the situation might seriously impede the improvement of special education. Because the actual dimission behavior is affected by many external factors and difficult for predicting, researchers suggest to replace the dimission behavior with the turnover intention in the study (Yu Jie, 2010).

Through literature review many variables could explain turnover intention, but professional identity and job satisfaction are two important variables. A large number of studies have shown that professional identity and job satisfaction would significantly predict turnover intention and are important factors for influencing turnover intention (Chen Chen, 2014). Compared with other variables, job satisfaction is first associated with turnover intention. Muchinsky and Tuttle (1979) reviewed 39 studies on job satisfaction and turnover intention, and found that 35 of them showed a negative correlation between job satisfaction and turnover intention, with the exception of 4 studies (Muchinsky & Tuttle, 1979). And organizational identity and job satisfaction could independently predict turnover intention (Tett & Tett, 1993); Moore and Hofman (1998) found that when teachers are strongly criticized by the outside world, their professional identity might, to some extent, guide them to overcome difficulties and dissatisfaction in work so as to hinder their turnover intention (Beijaard et al., 2013; Zhao & Zhang, 2017). In addition, the research also shows that job satisfaction and organizational commitment are important mediating variables of turnover intention, and the influence of other variables on turnover intention is mostly through job satisfaction, organizational commitment, etc. (Mobley, 1978).

Is the relationship between turnover intention, professional identity and job satisfaction the same for special education teachers? In order to answer this question, this study intends to take special education teachers as the subject group and analyze the relationship between the three variables in order to find the remedy for alleviating the turnover intention of teachers.

2 Methodology

2.1 Aim and objective

The objective of this study is to recognize the relationship between turnover intention, job satisfaction and professional identity by taking Chinese special education teachers as subjects. To find out the prediction variables and sustainable solution to reduce the turnover intention of special education teachers. The specific research objectives are as follows:

1. The turnover intention level of special education teachers in Chengdu;
2. Is turnover intention of special education teachers related to professional identity and job satisfaction in Chengdu of China?
3. What are the effective predictors of the turnover intention of special education teachers in Chengdu of China?

2.2 Research design and sample

In this study, 350 questionnaires were distributed from 19 districts and counties, including Shuangliu district, Jinniu district and Pengzhou district of Chengdu, and 326 valid questionnaires were collected (table 1).

Table 1: *The information of test objects*

Variable	Category	N	%	Variable	Category	N	%
School type	Mentally handicapped school	184	56.4	Sex	male	62	19.0
	Comprehensive school	142	43.6		female	262	80.4
Marital status	unmarried	126	38.7	Employment nature	regular teacher	230	70.6
	married	197	60.4		Non-regular teacher	95	29.1
Age	≤ 29	155	47.5	Years of working	≤ 3	138	42.3
	30–39	84	25.8		4–10	98	30.1
	≥ 40	86	26.4		≥ 11	87	26.7
On-the-job training time	Within a week	109	33.4	Academic diplomas	Junior college or below	82	25.2
	Within a month	116	35.6		Undergraduate	220	67.5
	More than one month	97	29.8		Master or above	23	7.1
Professional qualifications	Level 3 and below	113	34.7				
	Level 2	85	26.1				
	Level 1	104	31.9				
	Senior	23	7.1				

2.3 Instruments

1. Turnover intention scale

Farh, a Hong Kong scholar, designed the turnover intention scale in 1998. There are four questions, and the five-point Likert scale is adopted (1-strongly disagree, 5-strongly agree). Undoubtedly, the higher the score, the higher the turnover intention level of teachers. Cronbach's Alpha coefficient of the scale was 0.760, and the split-half reliability was 0.755. The correlation coefficient between each item and the total score was ranged from 0.657 to 0.854. The above indicators shows that this instrument is effective and reliable.

2. Professional identity scale of special education teachers

To measure the level of professional identity of special education teachers, the questionnaire was self-designed. The questionnaire is composed of four dimensions: professional cognition, professional emotion, professional belief and professional behavioral tendency. It must be emphasized that these dimensions were established by literature research, personal communication with expert researchers. Thirty-two attitude items were presented in a 5-point Likert format with responses from 1 (Completely agree) to 5 (Completely disagree). Cronbach's Alpha coefficient of the questionnaire was 0.910, and the split-half reliability was 0.826. The correlation coefficient between each factor and the total questionnaire ranged from 0.761 to 0.856. Furthermore, the KMO (Kaiser-Meyer-Olkin measures of sampling adequacy) was 0.908. And the Bartlett spherical statistical test showed Chi-Square (χ^2) was 3130.351, degree of freedom (df) was 253 and correlation was significant at the 0.01 level ($p = 0.000$). Factor analysis revealed that the cumulative variance proportion of the four factors reached 61.718%. In terms of confirmatory factor analysis, hypotheses of the model were verified via AMOS 21.0. Several indices were calculated to evaluate the fit of the model to the data: χ^2/df , Tacker-Lewis index (TLI), comparative fit index (CFI), root mean square error of approximation (RMSEA), standard root mean-square residual (SRMR). Model Fit Summary showed " $\chi^2/df = 2.098 (< 3.0)$, TLI and CFI exceeded 0.90, RMSEA = .058 (< 0.08), SRMR = .0541 (< 0.1)". All the indicators were significant at 0.01 level. These consequences indicated that the model was considered to have a good fit and the questionnaire "professional identity scale for special education teachers" has good reliability and validity.

3. Job Satisfaction Survey (JSS)

Job Satisfaction Survey (JSS) designed by Paul e. Spector et al. The questionnaire is composed of nine dimensions: salary, leadership, promotion, reward, welfare, operating conditions, work itself, colleagues and communication. The scale has also been widely used in many studies, with good reliability and validity. Its Cronbach's alpha coefficient was 0.940, and the level of each dimension was between

0.608 and 0.819 (Reheiser, Eric & Spielberger, D. Charles, 1994). In this study, Cronbach's Alpha coefficient of Job Satisfaction Survey was 0.909, and the split-half reliability was 0.918.

2.4 Procedure and data analysis

Teachers filled in the questionnaires anonymously. The data were entered into the SPSS version 21.0. In order to demonstrate the relationship between turnover intention, professional identity and job satisfaction of special education teachers, data were analyzed with Correlation Analysis and Regression Analysis.

3 Results

3.1 Respondents' turnover intention level

It is found in the study (table 2) that the average score of 326 special education teachers' turnover intention ($M = 2.3211$) was lower than the theoretical median. This indicated that teachers of special education have a low turnover intention. However, 61 of them had a high score ($M > 3$), that is, 18.71% of the special education teachers still had a high turnover intention.

Table 2: *Turnover intention level of special education teachers*

Turnover intention	N	M	SD
	326	2.3211	.82532

2.2 Correlation and regression analysis

A Regression equation was established with independent variables and dependent variables. Specifically, the independent variables include demographic variables, professional identity, job satisfaction and the dependent variables are turnover intention for the prediction model. Regression analysis is a mathematical statistical analysis of independent and dependent variables with causal relationship. Undoubtedly, the regression equation is meaningful only when there is a causal relationship between independent variables and dependent variables. Therefore, correlation analysis should be carried out before regression analysis (table 3).

1. Correlation analysis

Correlation analysis is performed between independent variables and dependent variables, and Pearson correlation coefficients is calculated. It is found that the

professional identity of special education teachers is negatively correlated with turnover intention. Likewise, the professional behavioral tendency, professional emotion, professional cognition and professional belief are negatively correlated with turnover intention. The correlation coefficient ranged from -0.636 to -0.336 ($p < 0.01$). It may indicate that the higher the professional identity, the lower the turnover intention of special education teachers; furthermore, there was a significant negative correlation between job satisfaction and turnover intention of special education teachers. Salary, welfare, promotion, reward, operating conditions, leadership, colleagues, work itself and communication are negatively correlated with turnover intention. Consequently, in the majority of cases the higher the job satisfaction, the lower the turnover intention of special education teachers. The correlation coefficient ranged from -0.564 to -0.195 ($p < 0.01$).

2. Regression analysis

Firstly, it is determined whether there is a multivariate collinear problem among independent variables. In this study, the tolerance value between independent variables is between 0.299 and 0.682 ($TOL > 0.2$), and the variance inflation coefficient is between 1.466 – 3.341 ($VIF < 10$), indicating that the multivariate collinear problem between variables is not obvious. Since all demographic variables were classified rather than continuous, all variables were converted to dummy variables prior to the regression analysis. To elaborate the effective predictors of the turnover intention for special education teachers, demographic variables (dummy variables), professional identity and job satisfaction were taken as independent variables, and turnover intention as dependent variables were put into the regression equation. In the first layer, all demographic variables (dummy variables) are put in with the enter method. And in the second layer, Stepwise method is adopted to put in all dimensions of professional identity and job satisfaction at the same time. The regression analysis model of turnover intention is as follows (Table 4). In model 1, taking demographic variables as independent variables, turnover intention as dependent variables, the variance of regression equation explaining turnover intention is 16.6% ($R^2 = 0.166$). “The school type, Employment nature, On-the-job training time” reach significance level in model 1. As a matter of fact, “Employment nature” has the largest beta ($\beta = -223$), and only “Employment nature” in four models have reached significant level absolutely. It unveils that in contrast with other demographic variables, “Employment nature” has a greater impact on turnover intention and is relatively stable. What’s more, the influence is negative ($\beta = -223$), manifesting that the turnover intention of regular teacher is lower than that of the non-regular teacher.

From model 2 to model 4, “Professional emotion, Professional belief” and “Leadership” entered the equation in turn. In model 2, 49.7% variance of turnover intention is explained by regression equation ($R^2 = 0.497$), among which profes-

Table 3: *Correlation analysis of turnover intention, job satisfaction and professional identity of special-education teachers*

	salary	promotion	leadership	welfare	reward	operating conditions	colleagues	work itself	communication	job satisfaction	turnover intention
professional behavioral tendency	-.010	.098	.422**	.011	.195**	-.024	.329*	.465*	.366**	.315**	-.397**
professional emotion	.272**	.160**	.462**	.206**	.509**	.287**	.424*	.687*	.368**	.565**	-.604**
professional cognition	.020	.103	.414**	-.003	.230**	.023	.433*	.517*	.315**	.345**	-.336**
professional belief	.270**	.263**	.377**	.264**	.361**	.198**	.317*	.670*	.325**	.511**	-.617**
professional identity	.200**	.206**	.524**	.173**	.427**	.176**	.468*	.750*	.431**	.564**	-.636**
turnover intention	-.215*	-.195*	-.418**	-.199**	-.370**	-.241**	-.378**	-.564**	-.368**	-.494**	1.00

* Correlation is significant at the 0.05 level (1-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

sional emotion alone contributes 33.1%. In model 3, the percentage of variability for the whole independent variables explaining turnover intention reach 54.2% ($R^2 = 0.542$), professional belief accounts for 4.5%. In model 4, all the predicted variables enter into the regression equation. The multivariate correlation coefficient (R) reach 0.744, the coefficient of determination (R^2) is 0.553, and the F of the model is 18.197 ($p < 0.001$). Therefore, demographic variables, professional emotion, professional belief and leadership can effectively explain the 55.3% variance of turnover intention ($R^2 = 0.553$). However, “leadership” alone contributed 1.1% of the variance.

To sum up, the variable with the highest predictive power for the turnover intention of special education teachers is professional emotion, which explains 33.1% of variation. A greater percentage of “professional belief” than “leadership” is found in the predictor variable, the former occupies 4.5%, and the latter takes up 1.1%. Moreover, after entering the regression model, all the predictive variables reached the significance level of 0.01, and the beta of the predictive variables was subtractive, indicating that their influence on the turnover intention of special education teachers was negative.

4 Conclusion and discussion

4.1 The turnover intention level of special education teachers is relatively low in Chengdu

The results showed that the average score of turnover intention ($M = 2.32$) was lower than the theoretical median ($M = 3$), indicating that the turnover intention of teachers with special education in Chengdu is relatively low. This is consistent with the research results of Li Yan, who found that the turnover intention of special education teachers is at a low level in southwest China (Li Yan, 2013). The reason for the low turnover intention of special education teachers in Chengdu may be that the party and the state attach importance to this field and support the development of special education in recent years. *Outline of the twelfth five-year plan for national economic and social development of the People's Republic of China (2011–2015)* put forward “care for and support for special education”, *Outline of the 13th five-year plan for national economic and social development of the People's Republic of China (2016–2020)* and *the 19th National Congress of the Communist Party of China* put forward “ensure the success of special education”. It can be seen that the party and the state begin to pay attention to improve the quality of special education. From 2008 to 2011, the national development and reform commission invested a total of 4.7 billion yuan to support the construction and reconstruction of 1,182 special education schools in western China, so as to improve the teaching conditions of special education schools.

Table 4: Regression analysis of turnover intention

Independent variable		Model 1	Model 2	Model 3	Model 4
Model 1	School type				
	gender				
	Marital status				
	Age				
	Years of working				
	Professional qualifications				
	Academic diplomas				
	Employment nature				
	On-the-job training time				
	Model 2				
	Model 3				
	Model 4				
	R				
	R ²				
	ΔR ²				
	F				
Mentally handicapped & Comprehensive		-.221***	-.101*	-.089	-.080
female & male		-.090	-.071	-.048	-.052
married & unmarried		-.027	-.089	-.110	-.101
30–39 & ≤29		.006	.065	.079	.069
≥40 & ≤29		-.149	-.100	-.026	-.040
4–10 & ≤3		.103	.078	.071	.068
≥11 & ≤3		.036	.056	.063	.070
Level 2 & Level 3 and below		.043	-.019	.032	.034
Level 1 & Level 3 and below		-.018	-.044	-.041	-.026
Senior & Level 3 and below		-.036	-.056	-.071	-.068
Undergraduate & Junior college or below		-.049	-.036	-.031	-.018
Master or above & Junior college or below		.104	.048	.060	.065
regular teacher & Non-regular teacher		-.223**	-.246***	-.220***	-.231***
Within a month & Within a week		-.128*	-.052	-.032	-.036
More than one month & Within a week		-.078	-.032	-.019	-.028
professional emotion			-.607***	-.794***	-.385***
professional belief				-.539***	-.271***
leadership					-.124**
R		.407	.705	.736	.744
R ²		.166	.497	.542	.553
ΔR ²		.166	.331	.045	.011
F		3.478***	16.23***	18.36***	18.197***

Dependent Variable:turnover intention

* Correlation is significant at the 0.05 level (1-tailed), ** Correlation is significant at the 0.01 level (2-tailed), *** Correlation is significant at the 0.001 level (3-tailed)

From the perspective of special education teachers' welfare benefits, *the special education promotion plan (2014–2016)* and *the second special education promotion plan (2017–2020)* both clearly point out that “special education teachers' allowance and other wage preference policies should be improved, and the total amount of merit pay should be appropriately tilted to special education teachers.” In recent years, China has promulgated *the professional standards for special education teachers* and the curriculum standards for blind, deaf and mentally retarded students. This provides a path and direction for the professional development of teachers, and also improves their self-confidence and pride. Both from the national policy, funding, welfare and professional system have increased the appeal of the occupation. Therefore, the intention of special education teachers to quit shows a low level.

4.2 Effective predictors of turnover intention include “employment nature”, “professional belief”, “professional emotion” and “leadership” for special education teachers in Chengdu of China

The regression analysis of predictors of turnover intention of teachers in special education shows that “Employment nature” are more stable and stronger than other variables (Model1). The non-regular teachers are more likely to resign than regular teachers. March & Simon (1958) proposed the participant decision model of turnover intention, which explained that the rationality of employees' leaving was often realized and the resistance of leaving was evaluated before demission (Jackofsky & Peters, 1983; Guan Xiaoyu & Yu Haibo, 2015). In contrast with regular teacher, non-regular teachers in resignation procedures are often less worried, that is to say, non-regular teachers have less obstacle for leaving their existing jobs. Because there is no mandatory length of service on the contract between the non-regular teacher and the employer.

Among the dimensions of professional identity of teachers in special education, only “professional belief” and “professional emotion” enter the regression equation. According to Price-Mueller's turnover motivation model, employee's demission is mainly affected by environmental variables, individual variables, structured variables and mediating variables. Individual variables include training, work participation, and positive/negative emotions (Price, 2001). Professional emotion is the teachers' understanding of the social value and self-value of the occupation they are engaged in and the feelings they get from the educational activities, which is an internalized and relatively stable psychological emotion and value judgment (Xiong Wen, 2014). It could be divided into positive professional emotion and negative professional emotion. Teachers with positive professional emotion often show good mentality and stable emotions in work, and can achieve the perfect combination of life and work.

They love special children, are willing to devote themselves to education and have low turnover intention. Conversely, teachers with negative professional emotion only take occupation as a means of making a living, lack of work enthusiasm and professional responsibility, are full of complaints, and show a high turnover intention. Likewise, professional belief has stability, once formed, it is not easy to change. And stable professional belief often plays a great role in the process of human development, as well as the role of motivation and restraint, which affects the tenacity of behavior (Zhou Lizhu, 2017). Teachers with strong professional belief can hold a sense of trust to their profession even in the face of complicated assignment every day. However, teachers with weak professional belief often lose heart due to the lack of spiritual support and inner motivation when facing emotional exhaustion, and even have the idea of giving up (Liu Junqi, 2014). On the other hand, in all dimensions of special education teachers' job satisfaction, only "leadership" enters the regression equation, which indicates that comparing with other dimensions "leadership" has a stronger predictive power for the turnover intention of special education teachers. In this study, "leadership" includes teachers' perception of superior competence, fairness and care. Graen & Dansereau (1975) et al. proposed the leader-member exchange (LME) theory, in which superior leaders establish different relationships with different employees due to time and energy constraints. In addition, more attention will be paid to "in-circle" personnel while less attention will be paid to "out-circle" (Green, 1996; Graen & Uhl-Bien, 1991). The "leadership" would affect employees' sense of organizational justice, job satisfaction and turnover intention (Zhang Jiarui, 2011).

5 Directions for the future

Based on the results of this study, it is hoped to provide suggestions for the education department to formulate policies or the management of special education schools to reduce the turnover intention.

It is found that the special education teachers' "employment nature" is the vital influencing factor of the turnover intention, to be specific, the regular teacher keep lower level than that of the non-regular teachers in turnover intention. However, at present, the regular teacher is seriously insufficient in China, in other words, a large proportion of non-regular teachers exist in school. From the perspective of policy, the "*special education promotion plan (2014–2016)*" clearly put forward that all regions should settle the problem of staffing according to the actual situation, and allocate enough regular staff to ensure the teaching and management. So far, some provinces and cities in China have explicitly stipulated the standards for the ratio of students to regular teachers in special education schools, such as Beijing, Shandong, Guangzhou, Heilongjiang, etc, nonetheless, the majority of regions have not finished yet. Huang

(2011) & Zhang (2015) found that Sichuan and Jilin province has not issued relevant policies on the regular staff standards for teachers of special education, and special education schools can only refer to the standard of teacher-student ratio of ordinary schools, namely 1 : 20 (1 regular teacher : 20 students). Under these circumstances, the areas in China that have not issued the regular staffing standards for special education school should implement them as soon as possible according to the actual situation of each region. Education departments should give priority to special education schools when allocating regular teachers.

Teachers of special education bear a heavy burden, not only in school, but also in counseling and home teaching. If there is no strong psychological foundation – professional belief and professional emotion, it is easy to generate turnover intention. There is little attention paid to professional belief and professional emotion in special education directly from the existing research. Generally speaking, both professional belief and professional emotion belong to professional ethics. Wang (2013) found that the pre-service training of special education teachers in China currently focuses on knowledge and skills, while ignoring or even saying nothing about professional ethics (Wang Yan & Li Huan, 2013). By this token, paying more attention to professional ethics such as professional belief and professional emotion is especially necessary. Nevertheless, the cultivation of positive professional belief and professional emotion should be a continuous process, which will permeate into every link of pre-service training and post-service training.

By the same token, it was found that “leadership” played an important role in predicting the turnover intention. At present, leaders of special education schools do not show enough care and support for teachers. Compared with teachers, leaders care more about parents and students. Secondly, teachers in special education schools are dissatisfied with the way of leadership and management, and their participation and autonomy in decision-making are low. Many things are decided by leaders and lack of humanity (Song Wenxia, 2007). When interviewing the decision-making mode of the superior, teachers often use such words as “rigid”, “stubborn” and “compulsive” to summarize (Chen Xia, 2015). Therefore, managers of special education schools should strengthen humanistic care for teachers and build a benign interpersonal atmosphere between superiors and employees.

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A music therapy experiment based on musical stimuli with artificially implemented physiological complexity in patients with dementia

(scientific paper)

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Abstract: *The aim of this study was to assess the effect of music therapy (MT) with artificially implemented physiological complexity (PHC) in patients in the first and second stages of dementia.*

The research was conducted on 34 seniors divided into three groups: (1) group with MT with PHC; (2) group with MT without PHC; (3) control group with no MT. The participants' cognitive functions were assessed by the Mini-Mental State Examination (MMSE) and the Addenbrooke's Cognitive Test (ACE).

A high proportion of participants were excluded during the study due to their health condition. No significant difference was found between the compared groups. Nonetheless, the overall results look promising: In the MT group with PHC, the cognitive functions improved in 3 patients; in the MT group without PHC, 1 patient improved; in the control group with no MT, there was no improvement in any of the participants.

Keywords: *dementia, Alzheimer's disease, music therapy, physiological complexity*

1 Introduction

Alzheimer's disease (AD) is a severe neurodegenerative brain disease in which the patient suffers from dementia. According to WHO (2019), AD accounts for 60–70% of dementia cases. According to qualified estimates, the number of people with dementia in the Czech Republic reaches up to 150.000 (ČALS, 2016). The increase in the incidence of this disease is worrying – over the next twenty years, the number of people affected is estimated to double worldwide (ADI, 2019). Although many research teams are trying to find a cure to eliminate harmful beta amyloid plaques, there is no treatment in current medicine that could address this disease effectively

(WHO, 2019). The only option therefore remains slowing the progression of the disease and using a variety of rehabilitation methods that help to train and maintain basic cognitive functions – thinking, memory, judgment. The patient's cognitive abilities, such as memory, attention, logical reasoning, and motor performance, are tested by standardized tests: The Addenbrooke's National State Examination (ACE) (Mioshi, Dawson, Mitchell, Arnold, & Hodges, 2006), Mini-Mental State Examination (MMSE) (Folstein, Folstein, & McHugh, 1975), or the Montreal Cognitive Assessment (MoCA) (Nasreddine et al., 2005).

Studies of patients with Alzheimer's disease (as well as Parkinson's disease) show that music is an essential therapeutic element for these patients (Herholz, Herholz, & Herholz, 2013; Irish et al., 2006; Lyu et al., 2018; McDermott, Crellin, Ridder, & Orrell, 2013). The acclaimed British neurologist Dr. Oliver Sacks, a recently deceased NYU School of Medicine professor, claimed that the ability of these patients to respond to music is incredible – they often suffer from aphasia, but they can sing and play musical instruments. These fascinating stories are described in the book *Musicophilia: Tales of Music and the Brain* (Sacks, 2015). He literally says that “music therapy can aid these patients, because musical perception, musical sensibility, musical emotion and musical memory can survive long after other forms of memory have disappeared” (Sacks, 2015). From this point of view, working with musical stimuli becomes one of the few rehabilitation therapies these patients are capable of.

The aim of our research was to verify the effectiveness of the music therapy method, which is based on empirically confirmed effects of musical stimuli in patients with neurological problems and is motivated by the studies of the pioneer of new rehabilitation methods Nicholas Stergiou (Biomechanics Lab, University of Nebraska, Omaha) (Hunt, McGrath, 2014). These are based on signals (sound, visual stimuli, tactile stimuli) that specifically contain artificially implemented physiological complexity (such as pink noise). The point is that the physiological signals (ECG, EEG, gait rhythm) of a healthy organism show some degree of complexity, so the signal is neither too simple (for example periodic), nor too random (as is the case with white noise). The optimal degree of complexity is difficult to quantify, although there are already several new mathematical tools such as Multiscale Entropy (Costa, Goldberger, & Peng, 2005), Detrended Fluctuation Analysis (Schumann & Kantelhardt, 2011). The so-called pink noise is a random signal with such a frequency response that the power spectral density is inversely proportional to the frequency of the signal. This type of noise surprisingly occurs in many biological systems – for example, in the rhythms of heart activity (Ryan, Goldberger, Pincus, Mietus, & Lipsitz, 1994), human brain activity (Natarajan, Acharya, Alias, Tiboleng, & Puthusserypady, 2004) or DNA sequence statistics (Mantegna et al., 1994). With biological aging and disease, physiological complexity decreases, for example, in the dynamics of heart rate,

breathing, or gait (Manor et al., 2010), which is an aspect that strongly corresponds to the intent of the research.

One of the possible approaches is to implement a pink noise disturbance into parts of the musical works that will be used in therapies.

The aim of this research was to work with patients in the first and second stages of dementia, using musical stimuli enriched with physiological complexity and subsequently evaluate (using standardized tests) whether their cognitive functions have improved. We quantified this improvement relative to the control group, which also underwent music stimuli therapy, but without implemented physiological complexity. Both groups were compared with another control group that did not receive music therapy. This design of the study made it possible to evaluate the effect of music therapy as such and to recognize whether physiological complexity is the key component that intensifies the potential effect of music therapy.

The study was approved by the Ethics Committee of the University Hospital Olomouc and the Faculty of Medicine of Palacký University in Olomouc on 11 December 2017, reference number 165/17.

2 Material and Methods

2.1 Sample selection

Three groups of patients were assembled in the POHODA Senior Home in Chválkovice in agreement with the management of the organization. Seniors in the first, at most in the second stage of dementia ($n = 34$) were selected according to the recommendations of a neurologist and a psychiatrist. The patients were selected by the psychiatrist based on standardized tests.

The participants were divided into three groups: The first group consisted of 12 seniors who did not take part in music therapy; this group is called control group (C) and its purpose was to monitor how the condition of seniors develops without therapeutic interventions. The second group consisted of 11 seniors, with whom we worked using music therapy with implemented physiological complexity; we call it PHC. The third group consisted of 11 seniors, with whom we worked using music therapy without implemented physiological complexity, we call it M.

2.2 Tools

To carry out the experiment, it was necessary to create know-how to enrich the recording of MIDI music with physiological complexity. This algorithm has already been published by the authors, including the results of a pilot study to determine what

degree of physiological complexity implemented in musical stimuli is acceptable to listeners (Dohnalova & Furst, 2017).

The standardized Mini-Mental State Examination (MMSE) and the Addenbrooke's Cognitive Test (ACE) were used to diagnose participants. The Czech version of the MMSE test was validated on the Czech senior population in 1998 (Tosnerova & Bahboush, 1998). The Czech version of the ACE test was validated on the Czech population in 2009 (Hummel-Fanfrdlova et al., 2009).

2.3 Experiment design

Therapy in both active groups (M and PHC) took place twice a week, on Mondays and Thursdays always for 45 minutes, from 9 November 2017 to 26 April 2018. The sessions were conducted by two music therapists – on Mondays the first therapist always worked with the groups PHC and M, on Thursdays the other one worked with both groups (it was necessary to eliminate the influence of different personalities on patients, therefore we always kept the same algorithm). The beginning and the end of each session were devoted to listening to the first sentence of Mozart's Sonata Facile, in which we implemented physiological complexity for PHC group. We also included activation methods – singing and playing simple instruments in between. Furthermore, we used reminiscence therapy, which is very suitable for patients with dementia (Ashida, 2000; Herholz et al., 2013).

2.4 Statistical analysis of the data

Due to a small number of participants in each group, statistical tests should be used with caution. All tests will only carry very little weight, so it is unlikely that we will find effect unless it is significantly strong. The differences in continuous variables (e.g. age) between the groups were tested by the Kruskal-Wallis test, which is a non-parametric version of the analysis of variance. Due to the small number of patients, we preferred data visualization to formal testing.

3 Results

In all groups we worked with very old and often ill people who also suffer from dementia in the first or second degree of disability. It was therefore not possible to obtain entry and final questionnaires from all participants. In the control group C we received 8 entry questionnaires and 5 final questionnaires, in the music therapy group M 11 entry and 10 final questionnaires, and in the PHC group we obtained 7 entry and 4 final questionnaires.

In the course of the experiment, the age of the patients proved to be one of the most important factors. The age structure of all three groups is shown in Figure 1. There is no difference in median age between groups (Kruskal-Wallis test does not reject the hypothesis of the same medians, $p = 0.54$). However, it can be seen that age dispersion in the music therapy group is smaller. In the other two groups age dispersion was larger, so more seniors in these groups were indeed very old. It has to be counted on more health complications in older patents. For example, in the PHC group one patient died during the experiment and the general health of five others worsened to the extent that they were unable to complete the experiment. There were also four deaths and three hospitalizations in group C.

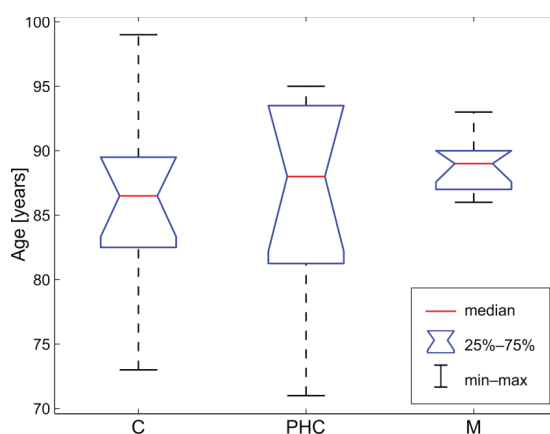


Figure 1: The age structure of participants in the three treatment groups: the control group (C, $n = 12$) without music therapy; the music therapy group with implemented physiological complexity (PHC, $n = 11$); the music therapy group without implemented physiological complexity (M, $n = 11$).

There was no significant difference between the results of the entry MMSE test between the groups ($p = 0.23$), although the PHC group achieved slightly better results. The median MMSE score was 18, 25 and 20 in the C, PHC and M groups. There was also no significant difference between the ACE test results between the groups ($p = 0.46$), although the PHC group again achieved slightly better results. The median ACE score was 48, 63 and 40 in groups C, PHC and M.

For further analysis, we subtracted the value of the entry score and the final score. This has eliminated to some extent the problem of entry score imbalance between the groups. The number of seniors who had at least one initial examination was so low that we chose a visual presentation of the data. Figure 2 shows the development of the MMSE scores of individual seniors.

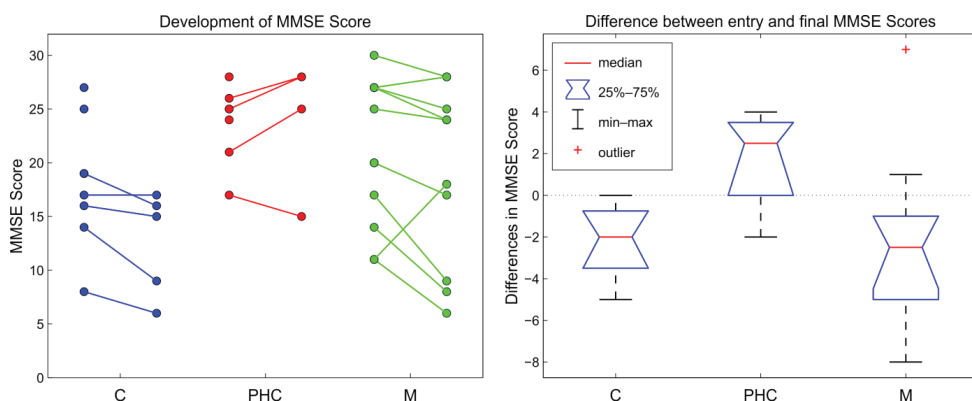


Figure 2: The development of the MMSE scores of seniors in the individual groups. Left: the line always links the entry and final scores of one patient. Right: the difference between the entry and final score values; a positive value of the difference indicates improvement. The control group (C) without music therapy; the music therapy group with implemented physiological complexity (PHC); the music therapy group without implemented physiological complexity (M).

It can be seen on the left side of Figure 2 that the condition of all seniors in the control group worsened. In the music therapy group M, all participants except one also got worse. In the PHC group with physiological complexity, the condition of three patients improved and one worsened. On the right side of the figure the differences between the MMSE entry and final scores were used. The participants whose MMSE value improved after therapy had a positive difference. The figure shows that in the PHC group the improvement in the MMSE test predominated, while in the M and C groups the deterioration was rather worse. If we test whether the difference in this change of the score is significant between the groups, the Kruskal-Wallis test does not reject the median compliance ($p = 0.11$).

The same analyses were performed on the ACE test results. The difference between the groups is not significant here either ($p = 0.75$), nor does the data display show any indication of the effect (see Figure 3). Almost all patients in all the groups got worse, except one in the PHC group and one in the M group.

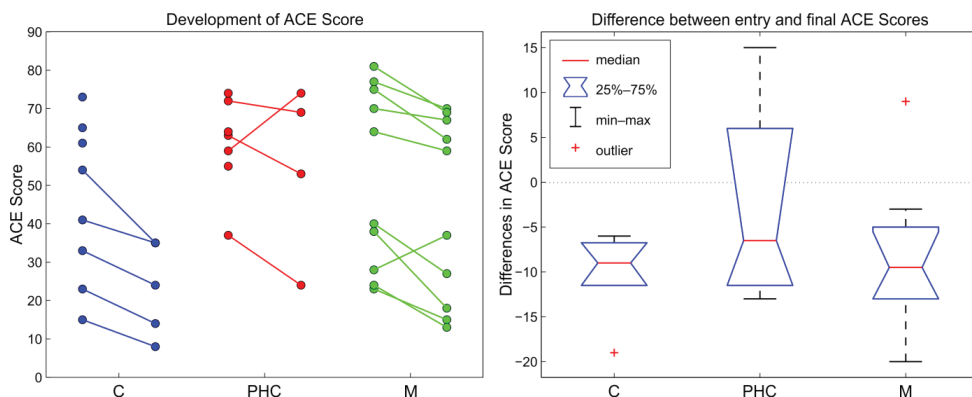


Figure 3: The development of the ACE scores of seniors in the individual groups. Left: the line always links the entry and exit scores of one patient. Right: the difference between the entry and final score values; a positive value of the difference indicates improvement. The control group (C) without music therapy; the music therapy group with implemented physiological complexity (PHC); the music therapy group without implemented physiological complexity (M).

Figure 4 shows the percentage change between the entry and final scores in both used tests (MMSE and ACE) simultaneously.

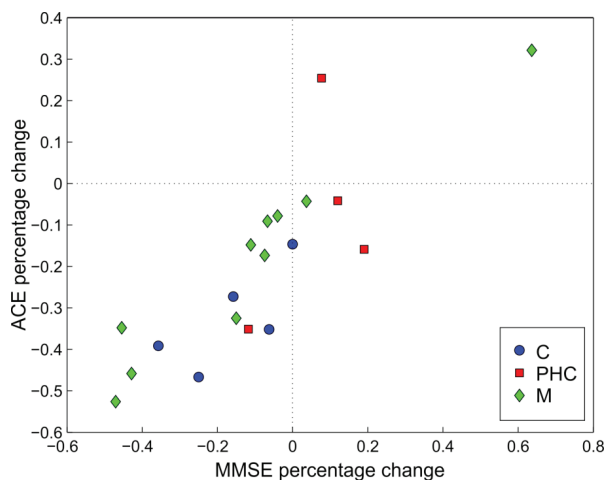


Figure 4: The percentage change between the entry and final scores in the MMSE and ACE tests in the three groups: The control group (C) without music therapy; the music therapy group with implemented physiological complexity (PHC); the music therapy group without implemented physiological complexity (M).

4 Discussion

The aim of this study was to work with patients in the first and second stages of dementia, using musical stimuli enriched with physiological complexity and subsequently to evaluate whether their cognitive functions have been improving (using standardized tests). In order to quantify the improvement/deterioration of cognitive functions in the study group, its results were compared with two other groups: a control group that did not receive music therapy and another group that also received music therapy but without implemented physiological complexity. This study design makes it possible to evaluate the effect of music therapy as such and to recognize whether physiological complexity is the key component that enhances the potential effect of music therapy.

The course of the therapy sessions was always the same. The result of this regularity was to induce a sense of familiar and anticipated ritual that led to calming of the seniors. In patients with dementia, the need for basic trust, which results from a loss of self-confidence, comes to the fore (Orti et al., 2018). Therefore it was necessary to ensure such an environment during the experiment and to avoid changes in the routine of activation and therapeutic methods. It is important to note that, according to Maslow's Pyramid of Needs (Maslow, 1943), patients with dementia are at great risk at the basic stages of the pyramid by losing their sense of safety and security, and subsequently their sense of recognition, respect and self-realization.

In the course of music therapy in both M and PHC groups, the emphasis was also placed on working with breath and focusing on the physical body and its manifestations while listening to music. In addition to listening to recorded music, we used activation methods – singing, playing simple instruments, and we also included reminiscence therapy. Using these methods, we achieved good results in stimulating long-term memory pathways. According to several foreign studies (Patel, 2003; Simmons-Stern, Budson, & Ally, 2010), singing songs is more effective in stimulating memory paths than just reading texts or passively listening to music. When singing, folk songs became the most popular genre of our participants, in which they were able to recall a large number of stanzas of individual songs, including variable lyrics. These texts then evoked life situations associated with them in the patients and helped to reduce the uncertainty caused by dementia (van der Roest et al., 2007). Moreover, the results of foreign studies (Istvandity, 2017; Lyu et al., 2018; Orti et al., 2018) suggest that music therapy is effective in enhancing overall well-being in patients with dementia/AD.

The evaluation of the final tests showed that the uneven distribution of the participants' age and their cognitive abilities at the beginning of the study is a problem. The music therapy group M was most balanced in terms of age, with the smallest age variance among the patients. This was due to the fact that the department from

which this group was formed was established all at once, in a very short time, and thus was occupied by the clients not gradually, but within a month. This is probably also the reason why the smallest number of people died during the study period in the M group. The age and general health of the participants in the PHC group probably influenced the findings of this study most significantly: in this group one participant died, and five others experienced a significant deterioration in their health condition so they were no longer able to complete the therapy.

According to the MMSE results, it is, however, an encouraging fact that the condition of three patients in the PHC group improved and one worsened. This is quite interesting, especially considering that the patients with similar baseline scores in the music therapy group all deteriorated. The PHC group already achieved slightly higher results in the entry MMSE and ACE tests. Although the differences in the entry tests between the three groups were not significant, the differences in the values of the entry and final scores were preferred for further analyses. In this way, the problem of the imbalance of the entry score between the groups was eliminated.

Although the results of this study are not statistically significant – either due to the imbalance of the groups or the insufficient number of participants in individual groups, its conclusions are still promising and motivate further research of the methods used.

5 Conclusion

The study has fulfilled the given goal – it brought new knowledge about the effect of music therapy with implemented physiological complexity. Although it was not possible to demonstrate a significant effect of the therapy due to the small number of participants, the results are encouraging. We believe it is meaningful to continue exploring this approach in a larger sample of patients, as dementia and Alzheimer's disease are an important issue in our civilization.

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How do patients from dynamic and cognitive-behavioural groups perceive dramatherapy?

(scientific paper)

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***Abstract:** This contribution deals with differences and similarities in perceiving drama-therapy in patients with neurotic disorder in the context of psychiatric treatment. The first goal ascertains if there are differences in assessment of dramatherapy according to the membership of dynamic or cognitive-behavioural group. The second goal ascertains differences during the first therapeutic session. The research assemblage was created by 57 patients from dynamic and cognitive-behavioural (KBT) groups from two mental hospitals in the Czech Republic. Data were gained by two-factor semantic differential and they were statistically assessed by a t-test (and further amended by qualitative group interviews). Conclusions have shown that the membership of patients of dynamic or KBT group has not an impact on their assessment of dramatherapeutic process.*

***Keywords:** psychotherapy, dramatherapy, group, dynamics, neurotic disorder*

1 Introduction

Integration of theatrical and psychotherapeutic theories were essential for the formation and development of dramatherapy as the specialization of artistic therapies. Thanks to this process, a wide spectrum of dramatherapeutic approaches was created. These dramatherapeutic approaches take into account primary therapeutic orientation of their founders. It is also possible to meet with approaches that stem from a wide spectrum of traditions such as psychoanalytic, analytic, developmental, narrative, integrative etc. (Johnson, Emunah, 2009). Despite a strong synthesis and integrative interpretation of dramatherapy it appears that some psychotherapeutic specializations are predetermined to join dramatherapeutic process more than other ones.

Also in the field of psychiatry and psychotherapy, we traditionally use various types of group therapies – in the Czech Republic (ČR) but also in many other states they often distinguish between dynamic groups and cognitive-behavioural groups (in further text abbreviated as KBT). Dynamic groups use dynamic group factors and they have a strong affiliation to traditional psychodynamic approaches (Karkou, Sanderson, 2006). In KBT groups the interaction between clients is constrained and the group dynamics does not represent such an important and effective factor (Kantor, et al., 2016). In some Czech mental hospitals dramatherapy is used as a supportive therapy in both types of these groups.

The authors examined if the character of a therapeutic group (the membership of dynamic or cognitive-behavioural group) has an impact on subjective experiences of patients in dramatherapy and also if the membership of the type of a therapeutic group causes the difference between perception of the first one and other therapeutic sessions. In dramatherapy, a group therapy is often preferred and group dynamic factors represent important means of therapeutic changes (Jones, 2007). From this perspective, it can be presumed that dynamic groups have a better predisposition towards joining dramatherapy than KBT groups and this difference manifests itself in the subjective perception of therapies by patients. Patients with neurotic disorder who took part in dramatherapy during six-week hospitalisation in mental hospitals have been chosen for research.

1.1 Czech dramatherapy in the international context

D. R. Johnson (Johnson in Johnson, Emunah, 2009) appreciates J. Moren and his extraordinary credit for the establishment of dramatherapy and points out a close correlation between the development of psychodrama and dramatherapy. Although this observation relates primarily to English speaking countries, in the environment of the Czech Republic – since 1960s – it has been possible to find some applications of psychodrama within the framework of integrative approach of F. Knobloch (Knobloch, Knoblochová, 1999) in therapeutic community in Lobeč. As a part of the therapeutic practice in this community they also used psychogymnastics – non-verbal methods of group psychotherapy based on pantomime. When comparing the development of dramatherapy in the Czech Republic and abroad, it is notable that dramatherapy has been internationally established in the socio-political context of the 1960s and the 1970s thanks to “*shared experience of many individuals and meeting various branches, people, thoughts, within the environment of pluralism and dialogue.*” (Pendzik in Jennings, 2016, p. 306–316).

The early history of dramatherapy in an independent Czech state after 1989 is connected with an American dramatherapist M. Reisman who worked with clients with

psychotic experience at the Prague sanatorium Fokus at the end of the 1990s (Valenta, 2007). Another person who has contributed to the development of dramatherapy is B. Kolínová, the founder of Czech Association of Music Therapy and Dramatherapy and also M. Valenta who has established (so far the only one) the university study programme in combination with special pedagogy at Palacký University, Olomouc. In 2008, the Association of Dramatherapists of the Czech Republic (ADCR) was established thanks to the graduates of the first long-term training in dramatherapy.

According to ADCR, dramatherapy in the Czech Republic is defined as *“psychotherapeutic approach using theatrical means of finding favourable balance in mental and physical areas, in relationships or in personal development. The focus of drama-therapy is a process connected with enjoyment of creation which is based on metaphor, fantasy, projection, interaction, rational, sensory and somatic...”* (Association of Dramatherapists of the Czech Republic, 2016).

In the Czech Republic dramatherapy has a tradition not only in health institutions but also within a broader spectrum of interdisciplinary environment which includes, for instance, schools or social services. Furthermore, Czech dramatherapy has important continuity with special pedagogy. As there is no legislative backing for the profession of artistic therapists, dramatherapy in practice is mostly applied as a part of another profession, for instance as part of clinical psychology, psychiatry or special pedagogy.

It is the dramatherapists with qualification in special pedagogy who often find work in health institutions, social services or non-profit organizations specializing in therapy and psychosocial rehabilitation. As their education does not represent an adequate competence which is required in health institutions, when trying to find a job in this area, these people come across numerous obstacles. In some cases, they work in the field of dramatherapy on a voluntary basis with a lot of limitations that this position in a medical team brings.

1.2 Definition and classification of dramatherapeutic approaches (focused on psychodynamic and KBT approaches)

Given the great variety, the classification of dramatherapeutic approaches is quite difficult. Classification is mostly based on information of a national or local character in spite of the fact that the contemporary trend in dramatherapy is the recognition of its interculturally different forms (Jennings, Holmwood, 2016). Contemporary scientific literature states for instance following classification of dramatherapeutic approaches:

- Classification of paratheatrical systems of therapeutic character, for instance psychodrama, sociodrama, psychogymnastics and therapeutic theatre, and parath-

eatrical systems of educational character, for instance *drama in education* and *theatre in education* (Valenta in Müller, 2014).

- Classification regarding historical roots into transpersonal-spiritual, psychodynamic, psychodramatic, integrative, physical-affective, cognitive-narrative, therapeutic-performative, improvisatory-practical and process models (Johnson in Johnson, Emunah, 2009).
- Regarding the character of dramatic production into dramatherapy that is procedurally oriented and into dramatherapy based on a performance (Snow in Johnson, Emunah, 2009).
- Classification regarding effective factors of dramatherapeutic process such as the use of metaphors, fantasy, projection, interaction or group dynamics (Johnson, 2007).

In relation to classifying in the area of dramatherapeutic approaches, we can notice the effect of psychodynamic and cognitive-behavioural approaches on dramatherapy. Although both these specializations belong to main psychotherapeutic schools, their theoretical bases had a completely different impact on the development of dramatherapy. The importance of dynamic factors is depicted in artistic therapies very well. It significantly influenced most dramatherapeutic approaches. As key dynamic concepts we can consider for instance the theory of transfer (and also against transfer), intersubjectivity and empathy, group cohesion and group dynamics, group unconscious etc. Approaches of psychoanalytical dramatherapy are strongly linked to this tradition such as (Irwin in Johnson, Emunah, 2009) psychodynamically oriented approaches, for instance developmental topics in dramatherapy (Lewis in Johnson, Emunah, 2009) or developmental changes (Johnson, 1986).

KBT theories had much weaker impact on the development of dramatherapy, however, this has the advantage of massive research which is enabled by easy manualization of cognitive-behavioural approaches.

In dramatherapy itself we can find only sporadic cognitive-behavioural approaches (Růžicka in Valenta et. al., 2017), their absence is, however, partly compensated by some contributions dealing with the connection of KBT with psychodrama, for instance Micheal (2000), Jacobs (2002), Avrahami (2003), Irwin (in Johnson, Emunah, 2009) and others, or with creative drama Karnezi and Tierney (2014).

Much more important wave for dramatherapy is the third KBT wave which connects specific therapeutic modifications (for instance dialectic behavioural therapy or mindfulness) with expressive approaches. As a particular case in the field of dramatherapy we can state Inside Improvisation, Gluck (2005), Diamond Approach of A. H. Almaas (Cyr, 1998) and many multimodal approaches Broek, Bernstein (2011) or Beaumont, Hollins (2016). Dramatherapy that conceptually stems from the approaches of the third KBT wave represents significantly integrating concept which

cannot be defined only within the limits of traditional KBT philosophy. A significant advantage of this concept is openness to various therapeutic theories and setting up a connection with significantly different psychotherapeutic approaches such as psychodynamic or humanistic specializations.

1.3 Dramatherapy in persons with neurotic disorder

The term **neurotic disorder** is here used by the authors as a comprehensive name for disorders which are, according to ICD-10, identified by means of numerical codes F40–F49 (a full name is “neurotic disorders, stress-induced disorders and somatoform disorders”). This group covers Phobic panic disorders (F40), Other panic disorders (F41), Obsessive-compulsive disorders (F42), Reaction to severe stress and adjustment disorders (F43), Dissociative disorders (F44), Somatoform disorders (F45) and Other neurotic disorders (F46). Three types of disorders referred to in the name have been merged into one big group due to their historical connection with the term neurosis and also due to the link between a significant part of these disorders and psychological causes. According to O. Kulísková (Kulísková, 2001), the term neurotic disorder has remained in the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD) mainly because of easier transition to a new classification.

In the area of psychotherapeutic research, we can find a number of valid conclusions confirming the efficiency of dynamically and cognitive-behavioural oriented approaches in persons with neurotic disorder, for instance Leichsenring (2013), Ritter (2013), Bögels (2014) and others. To a lesser extent, there are contributions concerning dramatherapy in this group of people. They focus on the application of particular dramatherapeutic approaches and theories, for instance developmental changes or the theory of roles Kless (2016), the creation of assessment tools Lištiaková, Valenta (2016) but also on the research on dramatherapy in some groups of neurotic disorders Anari et al. (2009), Figge (1982) and others.

In contemporary dramatherapeutic literature, however, the authors have not found any contributions dealing with preference for dramatherapy in patients with neurotic disorder according to their membership of a type of a therapeutic group. Given that psychiatric treatment in the Czech Republic is typically divided into dynamic and cognitive-behavioural groups, significant information regards the difference in groups focused on this therapeutic orientation in order to realize dramatherapy in interdisciplinary context.

1.3.1 Aims, hypotheses and methodology of the research

The aim of this pilot study was to examine differences in subjective evaluation of dramatherapy between patients with neurotic disorder and KBT group and also to ascertain possible potential of dramatherapy for both types of the groups. This aim was divided into two goals:

- **The first goal** examines whether there are differences in evaluation of drama-therapy according to the membership of dynamic or cognitive-behavioural group. The authors assume that dynamic therapeutic groups are better at joining drama-therapy and expressive techniques. Therefore they set up a hypothesis that patients from dynamic groups will evaluate dramatherapy more positively than patients from patients from cognitive-behavioural groups.
- **The second goal** examines differences between dynamic group and KBT group at first encounter which may have a crucial influence on the motivation of patients to undergo treatment and also on subsequent development of a therapeutic process.

The first two goals have been formulated into following hypotheses:

- **Hypothesis 1:** Clients of the dynamic group evaluate dramatherapy more positively than clients of the KBT group.
- **Hypothesis 2:** Clients of the dynamic group evaluate the first therapeutic session better than clients of the KBT group.

1.4 Sample description

A basic sample of this research is comprised of patients with diagnose F40–F48. “Neurotic disorders, somatoform disorders and stress-induced disorders” hospitalised in a mental hospital. The research sample was gained progressively, using the method of a deliberate sampling at an open ward 32 C at the University Hospital in Olomouc out of five therapeutic groups (3 dynamic groups and 2 KBT groups). As a result, the sample was comprised of 56 patients that is 31 women, 17 men and 8 patients who did not specify their gender when filling in a questionnaire. All the patients were over 18 years of age. For the purpose of research, they were divided into two subsets according to the membership of the dynamic group or the KBT group.

Patients are hospitalised for 6 weeks. During that time they work in two groups – that is 1 dynamic group and another group where they work with clients based on the principle of KBT. Dynamic psychotherapy work with group dynamics and there are clients for whom social interaction might be beneficial. KBT is structured psychotherapy focused on solving present problems in a relatively short time. Dramatherapy in patients was under way from the second week of their treatment because the first

week was earmarked for familiarisation with the clinic and the way of functioning the ward, medical examinations and classification of patients into the groups.

The team of dramatherapists was comprised of 4 women aged between 24 and 30 years. All of them were graduates of university study programme dramatherapy or special pedagogy at Palacký University, Olomouc. It can be anticipated that there were no significant differences in their working methods when leading dramatherapy. As a co-therapist in one of the groups, there was one undergraduate who was just finishing her university degree in psychology at that time.

1.5 Data collection methods and data analysis

Data collection was done by means of two-factor semantic differential (quantitative part) and also by means of a group discussion (qualitative part).

Two-factor semantic differential: The aim of using the semantic differential (SD) was to analyse subjective perception of energy and evaluation of dramatherapy in clients with neurotic disorder. For the purpose of this research, researchers used Chráskova's two-factor semantic differential whose measurement is based on a tool called ATER ("attitude towards educational reality"). 10 scales are divided into 5 scales in order to measure the factor of evaluation (h) and other 5 scales are supposed to measure the factor of energy (e). Since people sometimes tend to evaluate stereotypically when filling in scales, half of the scales are created in a reverse form (extreme values of these scales are inverted). Clients were working with a seven-point scale and their task was to evaluate the dramatherapeutic session as pleasant – unpleasant, undemanding – demanding, unpleasant – pleasant, bright – dark, strict – mild, easy – difficult, nice – ugly, problematic – smooth, sour – sweet, easy – difficult.

Quantitative data gained from the semantic differential were evaluated by means of methods of inductive statistics. Researchers equalized the averages of evaluation gained from both groups by means of a t-test. The term evaluation of therapy was operationalized as an average of items of semantic differential which relate to the factor of evaluation. Using the t-test it is possible to decide "*whether two data sets gained by measurement on two different sets of objects (for instance pupils) have the same arithmetic average*" (Chráskova, 2005, p. 150). Measured values were compared with importance level $p = 0.05$.

2 Results

Data analysis and data interpretation will be divided according to given hypotheses.

Evaluation of dramatherapy by patients of dynamic groups and KBT groups: The first hypothesis examined whether there are differences between average evalua-

tion of dramatherapy in patients from a KBT group and average evaluation of drama-therapy in patients from a dynamic group. By means of statistical analysis (t-test), no significant difference (significance = 0.3925) was proved. **The membership of a dynamic or KBT group does not have an impact on evaluation of dramatherapy by patients with neurotic disorder.** The following table 1 shows the results of this part of analysis.

Table 1: *Evaluation of dramatherapy in the KBT group and the dynamic group*

VARIABLE	t-tests: grouped: Group 1 and 2 (individual therapeutic sessions)							
	Group 1: dynamic approach				Group 2: KBT approach			
	Average dynamic	Average KBT	t	sw	P	Initial validity dynamic	Initial validity KBT	Standard deviation dynamic
Factor of evaluation	2.319	2.608	−0.8631	46	0.3925	22	26	0.846
VARIABLE	t-tests: grouped: Group 1 and 2 (individual therapeutic sessions)							
	Group 1: KBT				Group 2: Dynamický přístup			
	Standard deviation KBT				F-ratio dispersion		P dispersion	
Factor of evaluation	1.363				2.593		0.029	

Evaluation of the first dramatherapy session by patients from the dynamic and KBT groups: The second hypothesis examined whether there are differences between average evaluation of the first dramatherapy session in patients from the KBT group and average evaluation of dramatherapy in patients from the dynamic group. Even in this case, no significant difference (significance = 0.7725) was proved by means of statistical analysis (t-test). **The membership of a dynamic or a KBT group has not an impact on the fact how patients with neurotic disorder evaluate the first drama-therapeutic session.** The following table 2 shows the results of this part of analysis.

Table 2: *Evaluation of the first dramatherapy session in the KBT group and the dynamic group*

VARIABLE	t-tests: grouped: Group 1 and 2 (individual therapeutic sessions)								
	Group 1: KBT				Group 2: Dynamic approach				
	Average KBT	Average dynamic	T	sw	P	KBT	Dynamic	Standard deviation KBT	Standard deviation dynamic
Evaluation after the first session	2.644	2.800	−0.291	33	0.7725	9	6	0.931	1,495

4 Discussion

Statistical analysis has shown that the membership of a dynamic or a KBT group has not an impact on the fact how patients with neurotic disorder evaluate drama-therapeutic process. That difference is not apparent even when comparing averaged evaluation for the whole period of hospitalisation and also there is not an apparent difference between the first therapeutic session and subsequent process of drama-therapy. It can be presumed that subjective evaluation of dramatherapy by patients is more likely due to the way of leading therapy by a therapist as well as the way of working that is set by a therapist who leads a group from the very beginning.

These conclusions are supported by unpublished data from interviews with dramatherapists which suggest that differences between groups during the process of dramatherapy disappear also in the perception of dramatherapists. Following experience of one of the dramatherapists suggests that also in the KBT group it is possible to achieve a relatively high degree of group dynamics and mutual interaction, although this way of working may be surprising for group members at first: *“this is exactly what we experienced, we literally heard from the members of one KBT group that they were really surprised by the fact that during dramatherapy they acted as a group and the interaction between them was not channelled through a therapist but it was among them. They told us that it is not one-way or two-way but that in fact the interaction works in a number of ways which is good for them”* (not yet published data from the research).

Given that patients with a lower degree of complications are more often integrated into dynamic groups in the psychiatric treatment of neurotic disorders, the conclusions might suggest that evaluation of dramatherapy does not differ in view of the degree of patient's complications. However, this conclusion is, to a larger extent, hypothetical because patients in repeated treatment are integrated into a different type of groups than in pre-previous hospitalisation. In order to confirm this hypothesis, it would be necessary to compare subjective evaluation with conclusions of objective psychiatric examinations that was not possible to get during the research.

At the same time, it should be noted that this study has examined only subjective evaluation of dramatherapy by patients. Based on these results it is not possible to claim that there are no differences between groups. Furthermore, these conclusions reveal nothing about group dynamics and other factors of group work which may differ considerably. Similarly, it is not possible to claim that there are no differences between psychodynamically and KBT oriented dramatherapy because leading therapeutic process was similar in all dramatherapists considering the same therapeutic bases (their style of leading therapy tended to correspond rather with the character of dynamically oriented groups).

The conclusions of the study suggest that dramatherapy can be beneficial in treatment of patients with neurotic disorder, in particular as regards KBT groups because patients from these groups are not usually sufficiently equipped for work in verbal dynamic groups. The advantage of dramatherapy is that it enables to stimulate interaction even without the need of verbal interaction or perspective work. In a non-verbal space, it is possible to create interaction among patients at the level which is currently manageable for them.

An incentive for following research is, besides above mentioned proposals, examining of other factors (for instance factors of group dynamics) by which drama-therapy differs in originally dynamic or KBT groups, differences between perception of these groups by therapists themselves or the efficiency of dramatherapy in these groups. Conclusions might achieve a higher rate of validity if they were complemented by a qualitative part. Although the authors worked with some statements of therapists and health professionals, it would be necessary to get a bigger data set in order to conduct a qualitative part of research.

Validity of this study was examined by means of factor analysis of semantic differential items. After the deletion of one scale from semantic differential which was proved to be inadequately valid, it was found that all the scales measure a factor they were originally designed for. This is also demonstrated by relatively high values of factor loadings in table 3 (in red there are loadings bigger than 0.60). Negative values of factor loadings (scales 7 and 8) mean that these scales are reverse, that is, they have, in comparison with other scales, inverted scoring. For the purposes of this study, researchers used the modification of semantic differential which did not include a problematic scale 4.

Table 3: *Factor analysis of results in convenient scales of semantic differential*

SCALE	Factor loadings (Varimax standardised) (SD_all assessments) Extraction: Main components Dominant factor loadings are below labelled with a red mark	
	Factor of evaluation	Factor of energy
SD_altogether_s1	0.813850	0.243748
SD_altogether_s2	0.194812	0.865363
SD_altogether_s3	0.842122	0.254958
SD_altogether_s5	0.251848	0.894912
SD_altogether_s6	0.805848	0.223301
SD_altogether_s7	-0.545567	-0.192131
SD_altogether_s8	-0.783212	-0.143554
SD_altogether_s9	0.290850	0.878400

On the other hand, during the realization of the study, there were some obstacles in place which are unfavourable for proving validity. Given the methodic setting of the study, data was collected immediately after a dramatherapeutic session when assessment forms were distributed to patients. However, this method of data collection has proven to be very disruptive and a relatively big number of respondents refused that. According to some dramatherapists, some groups were excluded from the assessment in the light of above mentioned emotional aspects. Data collection was further complicated by the absence of clients in sessions, for instance due to a medical examination which took place at the same time as a session or due to the fact that they decided to quit the treatment. In spite of these complications and a low return, researchers managed to gain data from 57 patients during two years which is exactly a resulting number of patients that were included in the sample, following the above mentioned reduction.

3 Conclusion

Psychotherapeutic treatment of patients with neurotic disorder who are hospitalised in mental hospitals in the Czech Republic often uses classification into dynamic and cognitive-behavioural groups. Dramatherapy which is, given the focus on dynamic group factors, close to a dynamic type of groups, currently take place in several mental hospitals as supplementary treatment in patients from both groups.

The conclusion of this study is that the membership of patients with neurotic disorder of a dynamic or KBT group does not have an impact on their subjective evaluation of dramatherapeutic process (this assessment was gained by averaging of scales of a semantic questionnaire ATER (Chráška, 2007)). This conclusion does not exclude the possibility that the membership of a dynamic or KBT group may influence dramatherapy by means of other factors whose study is recommended by the authors as a topic for following research.

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An analysis of determinants of psycho-educational assessment for learners with learning disabilities in Brno, Czech Republic

(scientific paper)

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Abstract: *A comprehensive psycho-educational assessment for learners with learning disabilities (LD) is a significant event for parents, psycho-educational assessors, teachers and learners. This research study aimed to analyze the determinants of psycho-educational assessment for learners with LD in the city of Brno in the Czech Republic. Psycho-educational assessment for learners with LD remains a challenge in the Czech Republic, hence, there is an extensive debate as to how to best improve psycho-educational assessment outcomes. Mixed method was used in which both qualitative and quantitative data were collected from primary and secondary sources. Quantitative data from secondary sources as well as in-depth interviews were used to investigate issues and to discover how the psycho-educational assessors and teachers thought and felt about the whole process. Interview data from parents of school-age children with LD who had psycho-educational assessments done within the past one year were crucial for the proposed study to find out their experiences with assessment process. Findings showed that the main challenges in psycho-educational assessment were linked to lack of proper stakeholder collaboration and interests, inadequate funding and resources, time taken in assessment and community backgrounds of the learners. This study recommends that the government through the Ministry of Education should address the critical challenge of funding to ensure enough resources including personnel. The education regulations need to be explicit to all stakeholders to ensure maximum degree of inclusion and access to psycho-educational services by learners with LD without discrimination.*

Keywords: *compulsory education, determinants, integration, inclusive education, learning disability, pedagogical and psychological counselling center (PPCC)*

1 Introduction

Globally, most psycho-education assessment studies have been based on examinations and grading, not on learning, even though the assessors claim that the focus of their assessments are to inform learning as outlined by White & McCloskey (2005). The focus on funding, examination and grading, compromise the overall process of psycho-educational assessment for learners with learning disabilities (LD). World education systems are ever-changing in line with psycho-educational assessments of learners with LD, and hence posing the need for more professionals who meet the requirements of carrying out psycho-educational assessment for appropriate interventions to be accorded to the learners with LD who are currently facing challenges (The Gordon Commission, 2013). In the United States of America (USA) where learners with LD at every level have the probability of performing some educational tasks, most studies still point at gaps in the psycho-educational assessment process (National Research Center on Learning Disabilities, 2007). Many other countries have continued to source psycho-educational assessment tools from international sources; however, they have used them inappropriately within their local contexts (James B., 2006).

The persistent challenge in reforming assessment is the prevalent lack of attention to appropriate assessment plans, placement options, appropriate legislation and or considerations of the challenges that hinder success in psycho-educational assessment (Wiggins & McTighe, 2006). In some of the European countries, for instance Austria, there are no specific laws that apply to LD; however, the Czech Republic has LD legislations. These laws are, characteristically, related to both compulsory and higher education. When reviewing student achievement, tests form part of the assessment plan and are generally driven by policies, systems and goals. Efforts from psycho-educational assessment institutions and programs have led to the mass use of commercial psycho-educational assessment tools (The Ministry of Education, Youth and Sport of the Czech Republic, 2012).

The Czech Republic Education Act no. 561/2004 provides for integration of children with LD in mainstream schools whenever possible. In 1992, 1994, and 1998 Governmental Educational Ordinances unveiled Centers for Special Needs Education, Individual Education Program IEP, adapted technologies to be implemented by the Ministry of Education. The practice for inclusion varies from one institution to another, following school specific policies and management recommendations on school placement options (Riddel, Harris, Smith, & Weedon, 2010). This study is important for borrowing good practices that can be implemented in the Kenyan context since it examined the entire assessment processes at the pre-school and elementary school levels specifically for students with LD and endeavored to articulate the issues around the psycho-educational assessment process for learners with LD

and the implications. By understanding the assessment process, the challenges facing the assessment of learners with LD in Brno, Czech Republic and learning from the experiences, Kenya can implement some of the recommendations to ensure proper assessment for learners with LD.

Statement of the problem

The Czech Republic, just like many other European nations, endeavors to immensely improve the education standards; however, psycho-educational assessment of learners with LD remains a challenge. Even though there are legislative aspects that address stakeholder responsibilities in the Czech Republic, issues such as student assessment, collaboration among teachers, parents and psycho-educational assessors in providing intensive services to learners with LD still needs to be enhanced.

There is an extensive debate in the Czech Republic on how to best proceed with providing effective psycho-educational assessment for learners with LD from different communities especially the Roma. Providing adequate finance for assessment and educational resources and fair disbursement of funds for learners with LD is often a challenge. There is a dire need for research to improve standards of psycho-educational assessments to effectively inform proper placement options and strategies for supporting learners with LD. The problem is to get a clear empirical picture on the psycho-educational assessment process for learners with LD and challenges faced by assessors, teachers and parents. An analysis of determinants of psycho-educational assessment for learners with LD is paramount.

Purpose of the study

This study was designed to analyze the determinants of psycho-educational assessment of learners with LD in Brno, Czech Republic. Specifically, the study sought to understand the assessment plans, assessment placement practices, legislative influence and challenges facing psycho-educational assessment of learners with LD. Objectives of the study were the following:

1. To find out the placement options for learners with LD after psycho-educational assessment process in the city of Brno.
2. To investigate challenges in psycho-educational assessments of learners with LD in Brno.

2 Methodology

Research design

This study used descriptive survey design. Participants answered questions which were administered in the form of interviews and questionnaires. This enabled us to

describe the responses given and to make observations and gain valuable information. Mixed methods of qualitative and quantitative approaches were applied. This involved collecting, analyzing and integrating qualitative data gathered from primary sources through interviews and observation, and quantitative (dataset) to better understand the research problem. Mertens (2007), states that mixed methods allow dialogue leaned towards improving social justice hence enriching quantitative data collection process. A study using mixed methods involves not only collecting data through interviews but intentional collection of quantitative and qualitative data for the success of the study (Pasick et al, 2009). Quantitative data analysis was done using SPSS software. Based on chi-square measurement of nominal association, Cramer's V was used to give good norming. The formula for the variance of Cramer's V was used (Devlin and Pothier, 2005). The crosstab involved two nominal variables of multiple categories to give appropriate measure of association.

Target population

The participants of the study included teachers in pre-schools and primary schools, psycho-educational assessment practitioners at the PPCC, and parents of learners with LD. Brno has 137 pre-schools with 987 teachers. There are 66 primary schools with 2.268 teachers. The number of children in pre-school and primary school add to 43.084. The numbers of professionals working in the PPCCs in Brno were as follows: 6 special educators and 6 psychologists for Zachova center, 5 special educators and 5 psychologists for Hybesova center, 7 special educators and 11 psychologists for Kohoutova center, 5 special educators and 7 psychologists for Lomená center, 1 special educator and 6 psychologists for Sladkova center. Data from the Ministry of Education, Youth and Sports (2015) shows that there are a total of 6849 children with disabilities, 9.9% equivalent of about 681 of learners are educated in special classes, 50.5% about 3457 of learners are individually integrated and around 2711 of learners which forms 39.6% are educated in schools for children with special needs.

Sampling technique and sample size

In this study, purposive sampling was used for teachers and PPCC professionals, who had worked with learners with LD for the past three years hence had good information. Parents of learners with LD whose children had been assessed in the past 12 months were selected. Sampling of definite cases was reached based on the study purpose. Purposive sampling method (also known as subjective sampling, judgment or selective) is a non-probability sampling method and occurs when elements selected for the sample are chosen by the judgment of the researcher. Purposive sampling according to Mason (2010) is done in consideration of the total population.

Purposive sampling was used in this study to select a representative sample that could bring accurate results. The researcher purposefully sampled psycho-educational assessment stakeholders (service providers and parents) and stratified the sample by practice settings (pre-primary schools, primary schools, and PPCCs). Hence, 14 pre-primary schools, 7 primary schools and 3 PPCCs that cater for learners with LD were sampled. The interviews involved 40 participants from 8 pre-primary schools, 7 primary schools and 3 PPCCs that consented to the request from the contacts sent to the sampled institutions and parents; hence, the group met the homogeneous group criteria. Guest, Bunce, & Johnson (2006) states that twelve and above interviews of a homogenous group is enough for saturation.

Data collection

In-depth interview was used to investigate issues in an in-depth way to gain data on psycho-educational assessments processes and the challenges faced by teachers, parents and assessors. Secondary data included datasets for quantitative and qualitative analysis, which were instrumental in adding more value to the analysis. Documents used were official documents, personal documents, annual reports and datasets. Ministry of Education, Youth and Sports, Special Education and Institutional Education Department provided data on students with disabilities desegregated by the type of impairment found on the website of the Ministry's statistical yearbook. Official documents included legislative documents, annual statistics on children with special needs.

3 Research Results

Learners with LD and placement options

We found a total 6849 learners with different disabilities, who were in different placement options, according to the Ministry of Education Statistical Yearbook 2014/2015 – Performance Indicators. Findings showed that the largest groups of children with special education needs (SEN) are those with LD at 36.71%, placed both in special classes at 6.4% and 29.4% in individual integration, followed by Intellectual Disabilities (ID) with a difference of 11.71%. The lowest at the basic school level is VI at 0.93%. Slightly above half of SEN students in South Moravian region were individually integrated in mainstream schools. Individual integration was at 50.5%, a difference of 10.9% from the special schools for children with SEN and the lowest in special classes at 9.9%.

Sex of the Respondent Learners in/who			Type of Disability										Total
			ID	HI	VI	SD	PH	MI	LD	BD	Autism		
Male	Form of Integration	Special Classes	1.4%	0.0%		0.9%	0.1%	0.2%	6.7%	0.5%	0.5%	10.2%	
		are Individually integrated	2.8%	0.8%	0.5%	0.9%	1.4%	0.5%	29.7%	12.0%	4.4%	53.0%	
		Schools for children with SEN	17.2%	0.5%	0.5%	4.6%	0.5%	4.3%	0.9%	2.5%	5.8%	36.8%	
	Total		21.3%	1.3%	1.0%	6.3%	1.9%	5.0%	37.4%	14.9%	10.7%	100.0%	
Female	Form of Integration	Special Classes	2.5%			0.5%	0.0%	0.3%	5.8%	0.2%	0.2%	9.4%	
		are Individually integrated	4.3%	1.0%	0.5%	0.7%	2.6%	0.6%	28.8%	5.8%	1.3%	45.5%	
		Schools for children with SEN	26.2%	0.9%	0.4%	4.0%	0.7%	6.1%	0.8%	2.4%	3.6%	45.1%	
	Total		32.9%	1.9%	0.9%	5.2%	3.3%	7.0%	35.3%	8.4%	5.1%	100.0%	
Total	Form of Integration	Special Classes	1.7%	0.0%		0.7%	0.1%	0.2%	6.4%	0.4%	0.4%	9.9%	
		are Individually integrated	3.3%	0.8%	0.5%	0.8%	1.8%	0.5%	29.4%	9.9%	3.4%	50.5%	
		Schools for children with SEN	20.2%	0.6%	0.4%	4.4%	0.5%	4.9%	0.9%	2.5%	5.1%	39.6%	
	Total		25.2%	1.5%	0.9%	6.0%	2.4%	5.7%	36.7%	12.7%	8.8%	100.0%	

Figure 1: Cross-tabulation by form of integration, type of disability and sex

The dependent variable was assumed to be placement options (form of integration) and the independent variable to be type of disability. The gender of the students was used as the control variable. According to Hunt and Marshall (2002, p. 119) the reasons for massive increase in identification of students with LD include the premise that children who are underachieving are inaccurately identified as students with LD. This assumptive evaluation criterion is usually too subjective and unreliable. However, the purpose of assessment lies in the intervention and the results should support better placement options and interventions (Grigorenko, 2009). These findings could be related to the fact that there was greater general awareness of LD by the teachers and parents. It could also be assumed that bio-psychosocial stressors may have placed students at risk for acquiring LD hence the increased LD identification. Assessment plans focus upon children's developmental and educational deficits (Schmidt & Bailey, 2014). When early identification is not done, the student may fall behind in reading, writing and math. The Ministry of Education provides a framework for school districts and teachers to identify students with LD and to help them with learning of the essential academic skills.

Relationship between learners diagnosed with LD and placement options

There was strong evidence of a relationship between type of disability and form of integration for both girls and boys in the primary schools {Chi-Square = 2397.820, df = 16, sig. = 0.0001 for boys} and {Chi-Square = 1271.712, df = 16, sig. = 0.0001 for girls} giving a total of {Chi-Square = 3667.472, df = 16, sig. = 0.0001 for both boys and girls}.

Sex of the Respondent		Value	df	Asymp. Sig. (2-sided)
Male	Pearson Chi-Square	2397.820 ^b	16	.000
	Likelihood Ratio	2783.636	16	.000
	N of Valid Cases	4537		
Female	Pearson Chi-Square	1271.712 ^c	16	.000
	Likelihood Ratio	1538.738	16	.000
	N of Valid Cases	2312		
Total	Pearson Chi-Square	3667.472 ^a	16	.000
	Likelihood Ratio	4335.040	16	.000
	N of Valid Cases	6849		

Figure 2: Chi-Square Tests

This finding was statistically significant since sig 0.0001 was way less than 0.05. This suggested that when learners were diagnosed with LD, whether they were male or female, they all end up in the same settings. Hence, the placement procedures between both boys and girls with LD are similar.

The result of the Cramer's V significance test for relationship $P = 0.514$ for boys, $P = 0.524$ for girls and total of $P = 0.517$. Hence, the relationship between the variables of form of integration and type of disability were statistically significant. There was likelihood that there was no sampling error hence there was a true relationship for the learners with LD in Brno and its surroundings from which the sample was drawn.

Sex of the Respondent			Value	Approx. Sig.
Male	Nominal by Nominal	Phi	.727	.000
		Cramer's V	.514	.000
	N of Valid Cases		4537	
Female	Nominal by Nominal	Phi	.742	.000
		Cramer's V	.524	.000
	N of Valid Cases		2312	
Total	Nominal by Nominal	Phi	.732	.000
		Cramer's V	.517	.000
	N of Valid Cases		6849	

Figure 3: Symmetric Measures

More boys were diagnosed with disabilities than were girls. In the current study, more boys were identified as having SEN than girls hence, 2457 students had SEN, which made about 36.2 % of the total numbers of learners with special needs. When diagnosed with LD both the boys and girls ended up in similar placement options. More boys than girls were identified as having LD. There were more than double the numbers of boys diagnosed with LD as compared to girls with LD hence, 802 girls and 1655 boys with LD were placed in similar forms of educational settings. Therefore, it seems less likely that referral bias was responsible for the increased rate of LD observed among males compared with female learners.

Critical Disability Theory recognizes disability not only as the inevitable consequence of impairment but also as a complex socially constructed interrelationship between impairment, individual response to impairment, and the social environment (Devlin and Pothier, 2005). Hence, social environment may fail to address the needs of students with LD that do not match expectations of society.

According to Hallahan & Pullen (2003, p. 155) biologically boys are more predisposed to the factors causing LD as compared to girls. In addition, Shaywitz et. al (2004) have pointed out that referral bias accounts for gender variations in LD since more male students are likely to be referred by teachers compared to girls for psycho-educational assessment. While most research work suggests potential for increased prevalence of LD among male students due to vulnerability biologically, others have pointed out higher prevalence to referral bias.

Nevertheless, referral was more likely to be given to boys for SEN services because of behaviors, such as hyperactivity when they incur academic challenges. Socially, girls tend to be quieter as compared to boys hence better at hiding the behavioral characteristics therefore teachers rarely send them to the educational-psychological centers. Fuchs, Barnes, Fletcher & Lyon (2007) indicate, however, that boys are twice more likely to have LD compared to girls when referral bias is excluded from the study design.

Teachers held the view that there was a problem with the way recommendations were constructed for the learners. They felt that some of the recommendations were not attainable.

'My biggest challenge is that when we say something in some way, to be able to follow it. To enable our children to be in an environment which they are able to learn what they need to, and they are not to overwhelm them or overload them with tasks, but give them opportunities, in which they are able to learn through it and to live through it.' Teacher TR02 explained.

The teachers generally had the feeling that the assessors just recommended on paper but did not take the time to follow up whether their recommendations were being implemented or implementable. They said that some of the students would benefit more from placement in special classes than in individual integration as recommended by the psycho-educational assessors.

The main challenges in the psycho-educational assessment of LD included lack of proper stakeholder collaboration structures and involvement, community backgrounds of learners, staffing and inadequate resources for learners with LD, policies, and time taken in carrying out the assessment.

Stakeholder collaboration and involvement challenges

The study demonstrated that there was a high level of parental involvement from female parents in collaborating with psycho-educational assessors and teachers. However, the assessors working with schools in Brno spent very little time in direct contact with the teachers and learners with LD during the assessment process and after due to the high number of students being assessed. It was also revealed that the teachers felt parents were imposing influence on assessment results and in schools to suit their own interests. The major challenge with collaboration with parents from the teacher's side was communication.

Teacher TR01 explains her view about the parents' *'Since the last 5 or 10 years, the biggest challenge we face is the communication with parents. Their child is the center of space, nearly of the universe. Usually the parents and in most occasions the mothers are the ones who follow-up the recommendations from the psycho-educational assessment. Some parents think that teachers are a cause to the challenges their children are*

faced with and that it is the failure of the school to meet the needs of their children. They think that it is the school's mistake that their child is having the challenges' (sic).

Hosp and Reschly (2002), explains that strong family-school partnerships led to more positive educational outcomes for children. Lack of time devoted to school consultation and feedback during the assessment process and after is likely, at least in part, a reflection of the high demands placed on school psychologists or special needs consultants. The parents were the key stakeholders for both the teachers and the schools in general. There was need for collaboration between the two key stakeholders in assessments, teachers and the assessors.

Financial challenges

It was established that there was a challenge with funding from governments to provide for additional assessment and intervention processes for schools and the assessment centers, to ensure that assessment practices within school systems and at the assessment centers achieved the purpose accordingly for learners with LD.

'The assessment is generally funded by the local government. Currently the funding is not enough to cater for assessment needs of students. I only wish we had proper legislation to ensure adequate resources on the financial aspects. The reason we have few assessors is that the current funding can only be used for this number of personnel. Bringing in more experts means additional resources, we are limited by this.' Assessor PEA04 explained.

There was dire need to review the remuneration of the assistant teachers, of additional teachers to increase the numbers of teachers, improving the resources and of additional assessment staff at the centers. The Ministry of Education had prepared its reform of regional education funding, which was then waiting the approval by the Parliament of the Czech Republic. The reform applied to schools governed by regions and municipalities (more than 90% of primary schools) (Statistical Yearbook of Education, 2015/2016). Past funding of regional education had been derived from the number of students ('per capita' method), with financial resources provided from the budget of the governing bodies (mostly regions) and the state budget. This funding system has proved to have multiple issues and deficiencies. In funding staff, the system disregards different levels of teachers' salaries determined by the length of teaching practice, expertise-dependent financial supplements.

Community background

There was strong evidence that community background had a relationship with schooling in terms of psycho-educational assessment. Hence, more students diagnosed with LD were from the Roma community than any other community. Teacher TR11 described experience with a student from the Roma community. *'There is a very*

specific case which I had in my classroom of a child from the Roma community. He was able to follow the classroom activities for three months and thereafter he started slowing down on the activities and after that he had to go through the first class again. There has been a great difficulty because he really comes from a very poor social background, he was not given proper care so by the end of the first grade, which he had to go through again, he got recommended to study at a different school which was part of special education for LD...

Roma ethnic group in the Czech Republic constitute a minority. According to the census from 2011, the Roma nationality was reported to be a total of 13.150 inhabitants. Another study conducted by the Czech Ministry of Education in 2010 confirmed that in some regions this is still the case, while across the country Roma children are on average 12 times more likely to attend “special schools” than non-Roma children. Furthermore, the study found that on average Roma children constituted 35% of children diagnosed as having “mild disability” and consequently diverted into “special schools” rising as high as 50% in some regions.

A survey conducted by the European Roma Rights Centre in 2011 found that in 5 of the “special schools” they visited, between 90 and 100% of the student population were Roma, despite the fact that they were not children with intellectual disabilities.

Parent PR04 reported *‘My child was referred to the ghetto school and teachers have continually told me that my child doesn’t show any sign of a disability, I have always thought that it is because my child is Roma but all the same my child is comfortable there because other children are Roma too.’*

Schools such as these are commonly referred to as “ghetto” or “Roma” schools and once identified as such, application for admission from non-Roma families drops down.

Creating space within a society with barriers that make it difficult for students with LD to succeed metaphorically because of disabilities or because of aspects of minority is intensely a societal problem. Most teachers held the view that in the Czech education system this is traced back to the communist era.

Teacher TR08 cited a problem, *‘They don’t understand how and why the assessments are necessary. The most important part is that it is really influenced by the communist era, because it is a phenomenon which can be connected back to the communist times.’*

Marginalization in terms of race or class affiliations forced parents to protect their children. Students with LD were subjected to judgment when decisions following assessment results were made for instance following the need for the professional white class to pursue segregation of students (Ferri & Connor, 2006). The social, political and economic shifts in learners classified with LD, demonstrate that the Roma students are now overrepresented in LD, and in specific schools.

Teacher TR13 reports, *'This school is 99% Roma school, so the other groups do not bring their children here.'* This has created qualitatively different experiences for students from the majority group. Findings illustrate inequality, which parents and children from the Roma group get within assessment system.

Discriminative acts challenge an individual within a structure of routine oppression in everyday life (Moore, Beazley, Maelzer, 1998). There is a bigger population of the Roma students in SEN schools pointing to placement challenges in the education system. Special Needs Education should be able to address student needs; however, it was used to perpetuate marginalization connected to race and the socio-economic class. Functional demands are exercised on students with LD from the social environment as provided by public policy that drive attitudes of the society (Hahn, 1988).

Challenge in carrying out psycho-educational assessment

All the research participants pointed out that the time taken to carry out the assessment was too short, and the report preparation took a very long time. This was reported to be influenced by the high number of students being assessed.

Psycho-educational professional PEA01 cited the challenge with time.

There are many children who require psycho-educational assessments. The demand is high, so we carry out the assessments daily, we are always busy, we are few, but the assessment requests are many. In fact, we are not able to complete the assessments and to write all the recommendations by the end of the year. There are close to 500 children, who are unassessed by the end of the year, but we do our best and I can say that we assess so many students.

The National Centre on Response to Intervention (2010) integrates assessment with instructional interventions calling for the cooperation between the schools and at the assessment centers. It requires that the assessment itself must be a continuous process, not a one or two day process. When appropriate procedures are not followed and quality guidelines with paying attention to standard procedures are not put into consideration then the outcome of the assessment is likely to be untrue to the picture of the learner (Poon & Cohen, 2008).

The practitioners emphasized the objective assessment of skills and abilities of the children. Psycho-educational professional PEA02 provided view about the assessment practice. *'I think that what is important is the objective assessment of skills and abilities of the children, the practitioner has to understand them. Failure of which is like measuring a circle with a ruler and expecting to get accurate results.'*

In addition, the assessors as individuals should be passionate towards providing services and specialize in different areas of assessments to cater for the heterogeneity of learners with LD who are seeking support and services being offered by assessment centers (Grigorenko, 2009).

Challenges of parental, teacher and assessor interest

Our study also found out that most parents preferred the individualized integration as the placement option for their child with LD where their children are supported in the regular classroom because the model met the educational needs of their children. Few parents who favored group integration viewed the needs of their children as very high. Parent PR01 reiterates experience with assessment; *'I never expected any damaging news. The only part I did not agree with was the group integration. You see... today my son is not separated but he is doing well...'*

Parent PR07 explained the reasons for individual integration in the mainstream-classroom as opposed to the special class, *'My child would miss a lot when segregated from the rest of his peers in the name of special class. I don't think it is the right idea, maybe in some situations but generally I believe that my child should be integrated in the general classroom to receive quality education that he needs. I don't want such things like horrible names, loneliness and copying of unusual behavior. In the general classroom, my child received all the materials, plus any educational opportunities that comes with it'*.

Parents felt that individual integration provided more opportunities for student interaction with peers in a mainstream classroom, than in a special class. Teacher TR06 explained the influence of parents, *'..., there is this parent who decided that they wanted to have a highly gifted child and for that they were trying to get recommendations from PPCC, so they kept taking their child again and again in each of every PPCC in Brno to get this information even though their child hadn't been that gifted. So sometimes the parents want to have a diagnosis or to have a recommendation and some special approach from school.'*

Currently over 71% of students with LD visit mainstream primary schools and are provided with special education support, the rest of the students attend special classes. Most teachers felt that the school really tried to provide this information. Teacher TR15 stated, *'It is not easy to communicate what I feel about the child's condition and the need for group integration because most parents in such situations feel it is a kind of justification of the teacher's failure, however, we really try our best to give information as teachers, as much as possible.'*

Some studies have focused on issues of the learning process for instance how a student learns and how best the learner can be instructed, instead of only focusing on the classification and categorization question or eligibility to the program. Tzuriel & Samuels (2000) explain that the name and classification have many implications on attitudinal formation and stigmatization hence loses the full meaning of intervention.

Challenges related to qualified professionals

Findings showed that the schools and assessment centers had highly qualified professionals, however, there was still dire need for more qualified teachers to address the needs of learners with LD in a more effective way as more students were being identified with LD. Four out of 13 teachers interviewed had special education as their area of specialization, however, all the teachers were directly involved with learners with LD.

Teacher TR03 pointed out from a management point of view, *'It can be said that any specific school that is supporting inclusive education and education of children with LD is a single soldier in a battlefield. If the school is not able to prepare their own rules, guidelines and specification on how they can meet the needs of students with disabilities i. e. LD they are unable to help them... The school has to provide the support on activities or tools, special education methods and the teaching and learning aids'*.

The teachers expressed their interest and motivation in working with students with LD stating that their motivation was not just attached to the financial provision but on the work they did. Teachers were given fully funded opportunities to attend workshops and other short courses to be able to accommodate the learners. From the observations, the lesson planning was in accordance with the individual educational plans of the children. Findings show that 40% of the schools that provided education for learners with special needs were also used as centers for research to better accommodate the learners in schools.

5 Recommendations

Recommendations for funding and educational policy

The Ministry of Education should monitor all its departments in order to realize the obligation of enabling students with LD to acquire appropriate and effective psycho-educational assessments. This involves funding assessment needs such as resources for instance a variety of research-based assessment tools for use by the psycho-educational assessment assessors, recruitment of more psycho-educational assessment experts and teacher assistants at school. Moreover, the remuneration of the teachers dealing with learners with SEN in general and including the assistant teachers should be reviewed.

Education regulations need to be explicit to all stakeholders, including requirements for students with LD on placement alternatives to ensure the maximum degree of integration and access is necessary. In line with Article 3 of the Salamanca Statement on Inclusive Education, the government should introduce legislation that unequivocally protects students' rights. The regional governments should intensify supervision in relation to assessment procedures at the assessment centers.

Recommendation for psycho-educational assessment for learners with LD in Kenya

Kenya can derive from the parental involvement in the assessment process as identified in the Czech Republic. There was awareness of the processes and procedures involved and parents had made significant efforts to ensure psycho-educational assessment for their children. Stakeholders should develop an operational definition of LD and objective diagnostic criteria in Kenya and sensitize all stakeholders on the prevalence of learners with LD and ways of managing their challenges and needs.

Even though there were challenges with placement policies in the Czech Republic, it was evident that there were clear assessment policies and a lot of effort had been made to ensure the implementation of the policies. Kenya can create and implement clear policies, which are lacking in the area of psycho-educational assessment to help guide how psycho-educational assessments are administered. The funding of psycho-educational assessment in Kenya should be streamlined to ensure provision of adequate resources for proper assessments of learners with LD. The assessors at the EARCs in Kenya should be properly trained in psycho-educational assessments to ensure no misdiagnosis of learners with SEN and any discriminative aspects hence, promoting proper placement and recommendations for learners with LD.

Recommendations for further research

Findings from the current study suggest the areas for future research development, by way of replication or extensions of the current study design with different participant groups, or by further exploring some of the additional findings that arose which were more extraneous to the specific research questions addressed in the present study. First, research examining male parents' participation in the psycho-educational assessment process using the methodology and semi-structured interview from this study is needed, to determine if the emerging themes are similar. Extending the current research to include male parents would help to give fathers a voice, as well as elucidate whether there are any differences between maternal and paternal experiences stemming from differing parental roles or diverse parental perspectives regarding the meaning of their children's psycho-educational assessment experience.

Secondly, further investigation of parental experiences with the psycho-educational assessment process and of the experiences which influence adherence to the recommendations with participants of varying cultural backgrounds could be explored. While the parents who participated in this study had children of varying ages in different schools and included assessments conducted all through the public assessment system, most of these participants identified themselves as European and from middle class economic levels. As discussed in the previous section, research has shown that strong cultural differences do exist with respect to education and learning disabilities. In addition, differing cultural views of the causes of student's

LD may lead to dissimilar thoughts and meanings for the family during the psycho-educational assessment process.

Researchers may also consider further exploration of an additional topic that emerged because of the interviews in this study. All participants discussed their difficulty with navigating through the psycho-educational assessment process. For some of the participants, this was the exact reason they decided to pursue an assessment from different assessment center, rather than through the same PPCC. Some parents also described a lack of support from the school in following through with recommendations or frustration from the teachers who had not read the assessment report prior to commenting on their children's behavior. Possibilities for beneficial future research may address these issues and explore parents' perceptions of navigating the educational system throughout the process of obtaining a psycho-educational assessment for their children.

A final area of research may involve a comparison between what parents remember from the information sessions when communicating the assessment results with the psychologist about their children's specific strengths and weaknesses and the information contained in the actual written report. Parents could be asked to provide the psycho-educational assessment report for their children, to get a closer look at parents' true understanding of the information given to them and the recommendations that were made, in addition to their subjective reports of how much they recall. This would be similar to previous work by Williams and Hartlage (1988), described in the literature review section, but would more broadly address assessments conducted by different centers and different special needs conditions, and would not also be dependent on the subjective recall of the psychologist or diagnostician.

6 Conclusion

The current study endeavored to analyze and understand the psycho-educational assessments process and the challenges faced by teachers, parents and psycho-educational assessors to better elucidate their experiences and observance. The study focused specifically on determinants of psycho-educational assessment using both qualitative and quantitative approaches.

Several additional experiences to those found in previous research studies were founding this study, which led to better understanding of the balance between parents' interests to follow through with psycho-educational assessment recommendations and their experiences of the feasibility of placement options within the existing education system. Some aspects of the policies for learners with LD as reported by the assessors and teachers were not clearly detailed, hence, continued to make it difficult for parents, teachers and the assessors to provide proper assessment. New policies

would positively influence both satisfaction of and adherence by professionals. It is hoped that future research will continue to explore psycho-educational assessment, teachers and parents' participation in the learners' psycho-educational assessments and the impact of assessment results for school as well as families of learners with LD.

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Indicators of inclusion within pro-inclusive kindergartens in Slovakia and abroad

(overview essay)

Tímea Tóthová

Abstract: A characteristic of inclusive kindergarten teachers is that they have different expectations from different children. They also work with the context – classroom and kindergarten environment so that every child can engage and participate in activities of interest without being disturbed. Teachers and other professionals in pro-inclusive kindergarten attempt to know children's microsystems and proactively co-create their mesosystem, meaning the supportive cooperative relationships between the kindergarten – family – peers – or out-of-school facilities that children regularly visit. Bronfenbrenner (1979), within the theory of ecological systems, defined the individual structures of environmental systems: micro-, meso-, exo- and macro-systems, in which child development takes place. Through this ecosystem framework, he drew attention to the importance of mapping important environments which children are part of, in which they develop and mature. Although this illustrative ecosystem framework has not been conceived by Bronfenbrenner in favour of an inclusive approach in the school environment, its application studies oriented on inclusion and inclusion indicators in school environment is now undisputed. In this study we describe research focused on the environment of five pro-inclusive kindergartens – the structure of children's mesosystem in specific kindergartens. The aim of the research was to explore "good inclusive practice" at pre-primary level of education, to map ways of internal functioning of visited kindergartens, their philosophy, the way of thinking about children, their needs and forms in which they cooperate with families.

Keywords: inclusive kindergarten, ecology of inclusive education, responsibilities of inclusive kindergartens, adaptability of preschool environment

1 Ecology of inclusive education

The ecosystem framework is an illustrative structure depicting a comprehensive system of specific environments in which individual children develop, which they are part of. From the immediate, closest environment that affects the child to the furthest. The author of this framework – psychologist Uri Bronfenbrenner – was mainly recognised for his best-known *Theory of Ecological Systems* (1979), in which the ecosystem framework defined human development. He formulated it to explain the natural characteristics of children and their environment, and their impact on children's growth and development within a comprehensively functioning whole (Berk, 2013; Psychology notes HQ, 2013). Later, however, he revised his theory (in 1994) as he admitted that he focused too much on the context and thus did not pay enough attention to the role of the individuals in their own development (Tudge et al., 2009). His revised *Theory of Bio-Ecological Systems* is therefore used in topics based on inclusion and inclusive education. In addition to the sets of environments, Bronfenbrenner emphasized the importance of biological and genetic aspects of a person, but rather prioritized the reflection on each person's personality traits that they bring to any social situation. This revised bio-ecological theory is positivized by the inclusion practitioners because it not only addresses and understands the needs of each developing person very individually, but also treats them comprehensively as a dynamic system of multiple ecological structures that interact with each other.

We understand efforts to comprehensively grasp every child and their needs at multiple levels of their lives as an important responsibility of an inclusive school. In addition to the central *biosystem* – person/child, we are talking about: 1. *microsystem*, the closest level that forms the immediate environment in which the child develops (family, friends, school), 2. *mesosystem*, which represents the structure of mutual relationships between important environments that the child actively participates in (the relationship of the school and the child's home environment), 3. *exosystem* represents important indirect effects on the development of the child within environments in which, however, the child is not actively involved (for example the indirect influence of mother's job on the child), and finally the most distant one 4. *macrosystem* that represents the culture of the society in which the child lives, its values, beliefs, customs and legislative conditions (Bronfenbrenner, 1979; Benjamin, 2015). Bronfenbrenner, in his already modified *Bio-Ecological Theory* (1994), also added temporal 5. *chronosystem* (thus pointing out the importance of perception and tracking changes over time). In this revised theory, development has been identified as a common product of four defining features: 1. person, 2. context, 3. process, and 4. time – referred to as (PPCT) Process – Person – Context – Time model (Ettecal, Mahoney, 2017). He was convinced that the only way to understand the child and their family is through a thorough study of the contexts in which their development naturally takes place.

Bronfenbrenner always focused on monitoring the child's development and helping families. In the above-mentioned PPCT model, he highlighted the importance of *proximal processes* – which are immediate day-to-day activities and permanent forms of interaction in which an individual develops and is occupied. In order to be effective for development, the interaction must take place relatively regularly over a longer period of time. Bronfenbrenner considered *proximal processes* to be *engines of development*. They are influenced by the characteristics of the *person, context* and *time*. The form, strength, direction, and content of proximal processes influence development as a combined function of the characteristics of the developing person (Tudge et al., 2016). The authors (ibid.) state that Bronfenbrenner (1994) emphasized the proximal processes and the importance of their reflection in terms of promoting individual competence and reducing dysfunction. The aim was to point out the details of common activities and interactions that affect development and to help to work better despite the potentially difficult situation in which a person/child may be. This is where we perceive the ideological correspondence of Bronfenbrenner's theory with the philosophy of inclusion. Both thought frameworks place primary importance on the need to get to know each person in their uniqueness and complexity. Such way of thinking should be the starting point of any service of pro-inclusive schools, thus helping to properly grasp the steps of interaction and support. Although Bronfenbrenner did not offer a clear methodological guide on how to do research through his theory, in inclusion studies, this theory is considered a conceptual tool or operational theoretical framework that is nowadays diversely methodologically supported (Mahlo, 2013; Anderson et al., 2014). In their study, Geldenhuys and Wevers (2013) investigated what environmental aspects affect the inclusive education of children in schools on the Eastern Peninsula of South Africa. They describe Bronfenbrenner's ecosystem framework as a tool to better understand the inclusive educational goal. They see it as a move away from categorization and an effort to create an environment in which all pupils can fully participate, and which they understand. The subject of their research was social justice, investigating how to improve the impact of children's ecological systems in favour of learning and strengthening the relationship between them. When interpreting research results, Bronfenbrenner's ecosystem framework provided them with a structure of impacts that were identified as barriers to inclusive education at the micro-, meso-, exo- and macrosystem levels. On the level of the micorsystem, the authors identified these barriers:

- parents do not support but rather negatively evaluate their children
- parents deny learning barriers, they perceive this as a reflection of the quality of their parenting, and therefore do not cooperate with the school
- the burden of domestic responsibility that parents place on a child negatively affects the child's performance at school
- competition, discrimination and/or rejection is present in the peer group.

On the level of the mesosystem, a phenomenon was identified that children were frequently raised by their grandparents who had low literacy and were unable to assist children in learning or to cooperate with the school. On the level of the exosystem, researchers identified a barrier in terms of inadequate teacher training regarding effective work with children with learning difficulties or strategies for working with parents, resulting in discrimination against these children. The level of the macrosystem was influenced by the attitude of medical doctors, who from their medical perspective emphasized differences. The system of “admission” of a child in school was built in such a way that teachers focused on the normative assessment of the performance of pupils who had to prove their ability to count to ten, otherwise they were expelled from school.

Hays (2009) in her research *Inclusive education: Educator’s perceptions of teaching learners with emotional, cognitive and physical barriers to learning* understands the ecosystems framework as a necessary theoretical concept that informs about the decision-making processes of educational practice. The author explains her research paradigm in that the concept of Bronfenbrenner’s ecosystem framework deviates from the medical model that influenced the educational context through special schools for special needs of children – such as a separate school for the blind, or for the deaf (Brownlee et al., 2000 as cited in Hays, 2009). The ecosystem framework is used to conceptualise inclusive education and through this conceptualisation several studies with different levels of analysis have been carried out, the results of which have been applied to the education system. This has led to a paradigm shift from disability towards barriers to learning. In her research, Hays (ibid.) investigated in the form of semi-structured interviews with educators how they perceive pupils who have difficulties in learning, which may be at emotional, cognitive and behavioural levels, how they educate these pupils in the classroom and what teaching strategies they use. During the interviews conducted with nine private school teachers in Gauteng, she verified the statement Zaretsky (2005 as cited in Hays, 2009), as she concluded that there were many differences between the policy makers on the macrosystem level in their views of inclusive education. Few educators, irrespective of the length or nature of their professional experience, therefore truly understand and can effectively link this theoretical top-down support to the benefit of their daily practice. Another research finding was that educators are afraid of pupils’ barriers – more of the emotional than the physical ones. Emotional barriers are caused, for example, by violence in the family, low socio-economic status of the family, difficult family situation due to the absence of one parent or deprivation of basic needs, which affects the child in the form of learning difficulties and the children’s inability to reach their potential. Educators who have little support from pupils’ families and their surroundings feel that they are not competent to manage and lead an inclusive classroom. In their study, Swick and Williams (2006) offer options and strategies for kindergarten

teachers which they analyse through the perspective of the ecosystems framework. As they point out, families may face various stressors (dependent parents, family violence, homelessness, ...), which can pose serious difficulties especially in the early years of children's lives.

The perspective of bioecological theory offers a practical framework for understanding and supporting these families. The bioecological framework provides an insight into the situation of the family in a wider and transparent structure and enhances the understanding of families in stress. The framework offers concepts to build a relationship with the family (for example, a grandparent can act as "an anchor" for a child as a starting point for solving a problem and linking to the family-school cooperation). The authors (*ibid.*) consider such professional approach by the kindergarten to be inclusive because it is helpful and supportive. It includes all systems in which families are involved and reflects the dynamic nature of true family relationships. It is also based on the idea of empowering families by understanding their strengths and needs. Each system is dependent on the contextual nature of human life and offers a range of possibilities and sources of growth. Potentially, by accessing these systems, we can have more social knowledge and a broader set of options for solving learning problems, as well as access to new dimensions of self-exploration. Microsystem is a place for the initial exploration of the world – a reference point to the world. It can provide the child with an educational culmination of care or, on the contrary, a set of ghostly memories (first encounters with violence). The most influential is the form of what children experience in relation to developing trust and reciprocity with their key persons—*attachment*, bonding, first confidence building. Horňáková (2019) also classifies a teacher to be among the key persons and writes that the educational activity of an adult is effective if the child evaluates their behaviour as reliable and supportive. Exosystem is a structure that mirrors what a child experiences in a mediated way but has a direct impact on the child. In these systems the child lives psychologically, but not physically. For example, a mother's workplace may facilitate the life of the child and family, or on the contrary it may increase family stress. As the authors (Swick, Williams, 2006) state, in many cases exosystems cause stress because we do not treat them as we should. Many children are aware of the stress from their parents' workplaces without being physically there. Creating a family friendly environment within the exosystem seems to be important. Macrosystem acts as a powerful source of energy for families. It determines when, where, what, and how our relationships can happen. Without the support of the macrosystem (faith, services), children and parents are hurt, and their situation worsens. The true power of mesosystems lies in the fact that they link two or more systems in which children and parents live. The authors (*ibid.*) point to the important role of "mesosystem agents", which are the persons (engaged pro-inclusive teacher, therapist who comes to school, etc.) who inevitably link important children's environments. As they state

further, without a strong cooperating mesosystem, families tend to fall into chaos. In this context, Bosáková (2019) says that the awareness of community membership can be healing in itself. Chronosystem is an important part of family assistance and support analysis, because family history can explain more about parent-child relationships than is evident from the currently existing dynamics (Frod, Lerner, 1992 as cited in Swick, Williams, 2006). Swick and Williams (2006) describe the effects of ecological systems on a child in the context of individual family stressors. In the situation of a family with an addicted parent, they say that the child stopped their ritual of attending church. She avoids contact with the community because of her mother's alcohol addiction. Such an adaptive family pattern serves to protect the family from further emotional harm but prevents the child from having the necessary communication and relationships. Chaos of the microsystem begins and extends to the meso- and exosystem of the family. If the mother is addicted to alcohol, marital problems arise, the child can be taken to the care of the grandparents, and their primary family background which the child was used to is now absent. The authors (ibid.) offer strategies for kindergartens to support such families:

- Encourage the family to have access to the necessary information and advice in dealing with addiction
- Support the family with identified resources and help them to respond effectively to the specific challenges they face
- Guide the family to a healthy lifestyle for each member

When the stressor is family violence, it should be borne in mind that what the children are experiencing living with a violent parent was what the violent parent most likely experienced as a child in the past. Kindergarten professionals' strategies aim to cut this circle of violence by offering early intervention:

- communicate the child's fear in a non-blaming way towards the parents
- establish a relationship with parents so that they can participate in a professional solution
- build on reflecting their caring and kind behaviour.

The ecosystem framework offers a structure for a comprehensive reflection of the effects on the child, which may result in a change in behaviour or inability to learn. It helps to uncover the real cause of children's problems, while also identifying the strengths of their ecological system to improve the situation for the children and their families.

2 Responsibilities of pro-inclusive kindergartens

Each kindergarten is a system that responds daily to a variety of children's needs, but also to the needs of parents or employees themselves. In pursuit of a holistic approach and the sustainability of its vision, an inclusive kindergarten needs to reflect the needs of all its participants, realizing that they are interdependent, interacting with each other. This may be the need for the child to be able to learn with which the parent is unable to accept, or, for example, the need of the parent connected to the fear from the adaptation of their child in a new environment that the child perceives and mirrors. We consider it necessary to emphasise that the pre-school period is a time when the child is still very vulnerable, sensitive, and dependent on the quality of the social interactions in which the child is involved. Kindergarten teachers are key figures, as they may reflect, for example, the socio-economic risk status of the family (an exosystem aspect) that affects the child, their behaviour or performance. When identifying and choosing solutions to meet the children's needs, it is necessary for the teacher to be able to choose the participants of the school community whom they identify as key for a particular situation. These may be parents, grandparents, guardians, peers of the child, colleagues, other necessary specialists (psychologist, speech therapists, therapeutic or special pedagogue), but in solving the situation the coach or head of the leisure club who is in regular contact with the child and their family may be supportive too. The theory of bioecological systems helps in this approach, as it illustrates to the kindergarten team the structural framework of the breadth (ecosystem framework) and depth (proximal processes – engines of development) of each person's developmental effects. However, the primary "ecosystem thinking" and "ecosystem approach" to addressing different risk situations can only be effective and sustainable if it is understood as the responsibility of all professional participants in the inclusive school community, not just the teacher. In this context, Rouse (2008, p. 7), in the study of teacher testimonies regarding the characterisation of inclusive practice, offers an illustration by a quote of one of the teachers: *"My colleagues always want me to deal with their problem pupils and I find it difficult say no because I don't want to see kids struggling. I know that the more I agree with this help, the less the others will consider it their responsibility ... I assume that this leads to some form of learned helplessness."*

3 Research study

Similarly, in our research, the category of "understanding of responsibilities" of kindergarten professionals proved to us as the main reference of whether the kindergarten is trying to be inclusive. Our research sample consisted of five kindergartens (from Slovakia, Poland, Czech Republic, Hungary and Austria), identified by

the European Agency for Special Education and Inclusion, or by universities in the country as examples “good inclusive practice” at pre-primary education level. In the conceptualization of the research, we were inspired by a study of “inclusive practices” by Florian and Black-Hawkins (2011). The aim of their study was to test teachers’ skills in the context of inclusive practice in terms of What? How? and Why? they do. As part of our study, the same questions were of interest – what is evidence of “good inclusive practice” in kindergartens, what, how and why teachers, but also the heads of specific pro-inclusive kindergartens do they promote inclusion in their practice. Florian and Black-Hawkins (2011) carried out observations in the classes of two primary schools in Scotland and subsequently supplemented them with interviews with eleven teachers of these classes. They were interested in how teachers create the meaning of the term “inclusion” in their practice. Subsequent analysis allowed them to identify practical examples of inclusive pedagogy that met the standard of extending the service of practice to all despite the fact that through setting the service some will be differentiated (Florian, Black-Hawkins, 2011).

In addition to observing the educational process in selected pro-inclusive kindergartens, we also chose a method of qualitative content analysis of pedagogical materials and a method of semi-structured interviews – always with two teachers and the head of a specific kindergarten. It was the method of interview that proved to be the most significant in our research. The questions of the interviews were directed at the thinking of teachers and principals, exploring what they see as a challenge in their work, but also why inclusive education in kindergartens seems to them to be helpful and meaningful to all participants. In addition to interviews with teachers and principals, informal interviews were also held with a psychologist or a teaching assistant, which also provided us with valuable information. The indicator confirming the inclusive direction of selected kindergartens was their similar understanding of their individual and cooperative responsibilities.

4 Individual responsibilities

Based on the interview data, we identified individual responsibilities of professionals in kindergartens as:

- *ecosystem thinking reflecting the individual needs of all people involved*

It is the thinking of individuals – teachers and principals of kindergartens, which is diverted from the defectological categorization of children. It looks at the individual needs of children through the lens of complexity, searching for the correlation of all the effects on development that are associated with the captured needs of the child, that are causing them. In addition to the needs of children, the professional also reflects the individual needs of parents and their colleagues.

“Regular teacher does a tickbox exercise and an inclusive teacher has an open mind. As if he went further.” (Teacher, Poland)

“The fact that children come from various backgrounds makes me think... but I mean in a positive way. I constantly evaluate whose need is more important, what will be the priority. Sometimes it is a child, sometimes a parent who is desperate, sometimes it is me, sometimes a colleague. For the day to be in harmony, it is important to find this hierarchy and then to help each other as a team.” (Teacher, Slovakia)

“We start the day with the children in the classroom by finding out how children are, how they slept. Each child has a notebook where parents note the child’s basic needs – how were they at home, sleep, eating, also little things. If there is something very important written there we also call the parent and ask them about it.” (Teacher, Austria)

– ***self-reflection in relation to personality characteristics and professional role***

It is the responsibility of both the teacher and the kindergarten principal to constantly reflect on their professional competences and personal characteristics in relation to the diverse situations with colleagues, children and parents.

“When I am not feeling alright and I am frustrated I cannot work well with a child.” (Teacher, Austria)

“An inclusive teacher should be a mature person, who can tell what belongs to them, what is their personality structure, and not to transfer their inner problems into the pedagogical practice. Such professionalism. And they should be open to challenges, work with them flexibly and to be supportive.” (Teacher, Slovakia)

– ***respect and creating safe supportive relationships with children and parents***

It is the responsibility of both the teacher and the principal to establish a secure relationship. It is a necessary basis of help and support, characterised by acceptance and respect – both for the adult and for the child.

“Or they tell a rule, but not to forget to come back – What did you want to say? Because children can feel that you respect them. They are personalities and the respect to children must be there, as well as to the adults.” (Teacher and principal, Czech Republic)

“For me in my group it is important the we are a mutual group, that everybody perceives each other according to their possibilities, but despite that everyone can stay as they are.” (Teacher, Austria)

– ***pro-inclusive/accepting attitude oriented on resources and everyone’s potential***

This is the attitude of a kindergarten professional which is described as openness and acceptance of each person/child, with the potential challenges that each individual may bring. This attitude is characterized by trust in each person’s/child’s resources and an effort to be supportive in finding solutions.

"I learned to be so open that the ones who came to us were accepted." (Principal, Slovakia)

"In the morning when children arrive they can do what they want. We observe them, what toys they choose for play, what they are interested in. We alternate toys and observe if the new material is attractive to them, how they react..." (Teacher, Austria)

"It is necessary to look for positive things, what works, what progressed, also when there is not working, look for small successes, for example if a child with Asperger's syndrome does not have a meltdown for two or three days, engages with the group and says sorry by himself." (Teaching assistant, Czech Republic)

5 Cooperative responsibilities

In addition to individual responsibility, another category was identified from the interviews, which we describe as cooperative responsibility in inclusive practice. Professionals in pro-inclusive kindergartens understood their cooperative responsibility as:

- ***providing service oriented on the ecosystem (children, parents, professionals)***
It is the responsibility of the whole team, which cooperatively creates a broadly oriented kindergarten service that seeks to facilitate and saturate the needs of all children, parents and kindergarten colleagues because they understand their correlation.
"If we do not work with parents we cannot help the child." (Psychologist, Austria)
"If we work with human potential of the employees, we meet as a community, we also have a crisis psychologist, who works with teachers, where they solve personal problems on teachers, but also matters from the classroom." (Psychologist, Austria)
"Parents often say how well children function here and not at home. With that they are actually telling us – will you help me? And because we are the kind of kindergarten that we are, let's say inclusive, so we try to do that. In the end, it is for the child when you help the parent." (Teacher, Slovakia)
- ***mutual professional support and vision, co-creating of equity***
The kindergarten team does not compete but rather supports each other in difficult challenges. Individuals support and supervise each other. It also creates an environment in which power is handled well. Everyone on the team, their personality characteristics or professional perspective/skills can bring a "key" to address the needs of the child/parent.
"The principal leads us towards listening to the child, so that we do not judge after five minutes, but so that we observe the child for a longer time and consider everything that the child encounters – it could be parent, the situation at home, or some

developmental difficulties that prevent them to feel good in the kindergarten and to learn something new.” (Teacher, Slovakia)

“There is a lot of supervision between our professionals ... exchange, coaching” (Principal, Austria)

“All that work with a child look in the same direction” (Teacher, Austria)

“We need to get that thinking across, from the cleaning lady to the principal” (Principal, Austria)

– ***unified and mature communication***

The responsibility of the inclusive team to communicate uniformly and maturely/diplomatically. Unified communication can be very important, for example, in situations with children with autism spectrum disorders, children in the adaptation process, but also in providing information and strategies to the parents.

“With parents, I always have to consider where the problem of the child is. Then I need to observe at which stage the parents are, mother and father, sometimes they are at a completely different stage and I need to think where the initial point is, when I can start to have a conversation. I have twins in the group, the girl is physically disabled, and the boy does not speak. They started last year, and the boy progressed a lot but the girl not so much and now I have to prepare the mother for the scissors, as they are twins, now the scissors will be opening a lot between the boy and the girl. The boy is progressing more, and the mom is not prepared for this.” (Teacher, Austria)

– ***creating accepting and open environment – kindergarten community***

A team of inclusive kindergarten experts “opens the door” for all, bringing together children, seniors, mothers, fathers, siblings, the community.

“Our services are for everyone, not only children from our facility.” (Psychologist, Austria)

“We are trying to make it close to the family environment.” (Teacher and Principal, Czech Republic)

“There is a strong collaboration and exchange between parent, therapist and the kindergarten here.” (Teacher, Austria)

– ***self-reflective understanding of inclusion as a PROCESS of “breaking barriers”***

The inclusive kindergarten team perceives its own limits. Despite the fact that our research included pro-inclusive kindergartens identified as examples of good practice, fulfilling the vision of inclusion has been presented self-critically – as an unfinished process of breaking barriers.

“Even though we are an integrative setting, but we go in the inclusive way, we fulfil a lot of the inclusive direction or approach. We minimise barriers in the fact that a certain child is limited and only in their diagnosis, that it is not only about that.” (Teacher, Poland)

"We are on a journey, but it is a long way to inclusion. We do not have a lift here; the building is old. A child in a wheelchair cannot visit children in the classroom upstairs." (Teacher, Austria)

"[inclusion] is as if a vision of our kindergarten. I understand it as a goal that is achievable, but it is not achieved yet." (Teacher, Slovakia)

6 Conclusion

Currently, every kindergarten perceives and addresses the diversity and complexity of its needs that occur daily and interact with each other. Already the school's efforts to understand their breadth, depth and interactions by including all its participants, we understand as an important pro-inclusive step. Taking responsibility and transforming the kindergarten service in favour of uniqueness and complexity should be the goal that pro-inclusive schools seek to pursue (Florian, Linklater, 2010). This requirement of transformation – the adaptability of the school as a system for the specific needs of its specific children and all its participants was aptly pointed out by the principal from an inclusive kindergarten in Austria, which we visited during our research project (Figure 1).

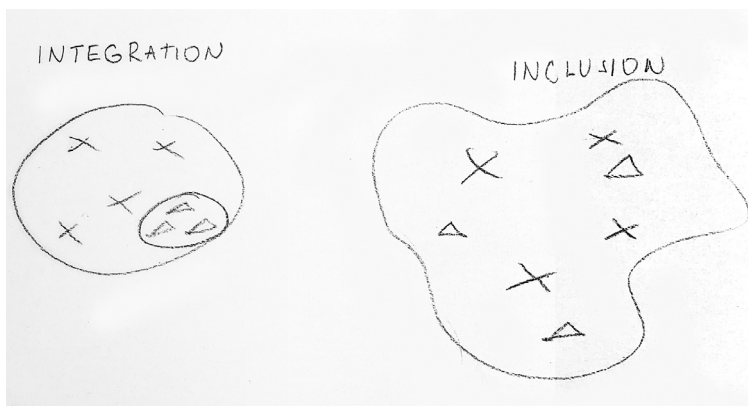


Figure 1: *The ability of transformation and adaptability of the kindergarten for the benefit of all its participants*

As she graphically suggested in the interview, the response to the diversity of needs is to be a diversely oriented flexible system capable of being transformed to the nature of its individual needs. This ability is dependent on the characteristics and reciprocity of all school participants who interact with each other and create this environment.

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Humour in dramatherapy in addicted persons

(overview essay)

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***Abstract:** The research focuses on the description of humour and its effect on drama-therapy intervention in people with addiction. In a short research, we used the so-called “sculpture” as one of the sources for obtaining data, where clients depicted selected thematic areas using their own bodies and subsequently verbally described their meaning. Another method used was a questionnaire survey with open questions, when clients answered thematic areas that arose from sculpture and last but not least it was field observation of dramatherapists. This compares body-based data and subsequently verbalises the attitudes and ideas of clients in conjunction with dramatherapist observations. Dramatherapy as a discipline uses for its work means such as play, role play, improvisation and more. These means, and especially improvisation, offer a number of situations and stimuli where humour is revealed and applied. The topic of humour arises in almost every dramatherapy intervention and works in different dimensions to the process. As it turns out, humour works on multiple levels, for example as an encouraging humour that helps build a therapeutic relationship, but also on opposite levels, serving as an escape from the topic the client is currently working on. It was the exploration of these levels of humour in dramatherapy intervention that was a central theme of the research study.*

***Keywords:** psychotherapy, humour, dramatherapy, group, addictive behavior*

1 Introduction

The theme of humour is closely linked to psychotherapy, as S. Freud already creates many links to jokes and humour in general in his writings *Dream Interpretation* (in Christoff, Dauphin, 2017). Another important psychotherapist related to humour

was I. Yalom (2016). Flores P. J. and B. Carrulth (1998) devoted a whole chapter to humour in connection with creativity in their book. During dramatherapy intervention, linking to humour is a kind of essence that naturally manifests itself through improvisation and play. R. Emunah refers directly to this in the Five-Step Integrative Model (Emunah in Johnson, Emunah, 2009). Specifically, the combination of addiction treatment and humour induces a priori a sense of contradiction to almost exclusivity. However, K. Kalina (2008) also refers to the topic of humour in the context of therapeutic communities. Humour is evident in the environment of psychotherapy and dramatherapy, and we can observe its immediate presence in the therapeutic intervention.

Humour can undoubtedly be described as a typical human ability that manifests itself across the social spectrum and cultures. Therefore, it is not dependent on socio-cultural status, although it often gives rise to humour. Also lived experience, experience, but also belonging to a specific subculture can influence topics that appear in humour. When asked what humour is and how it manifests itself in society, Martin (2006) answers from the perspective of psychology by dividing it into four components:

- a) social context
- b) cognitive-perceptual process
- c) emotional response
- d) vocal-emotional expression of laughter (R. A. Martin, 2006, p. 5)

Hartl (2004, p. 84) presents a comprehensive view that describes humour as a joyful emotional relationship that is evoked by comic thought, idea, situation. Borecký (in Heretik, 2019), on the other hand, considers the concept of comic, or also ridiculousness, to be an umbrella. This umbrella term is chosen because the comedian is an older term and comes from ancient Greece and refers to the term *comicos*, which was used as a counterweight to sadness. The theme of sadness and humour is followed by Heretiková and Heretik (2009), where they represent humour as one of the healthy defense mechanisms in dying/sadness and in topics dealing with death. Humour thus helps to cope with a difficult life situation on a cognitive and emotional level. Humour can be recorded primarily on the cognitive level and considered as a kind of intellectual game, as we see above. However, McGhee (Goldstein, McGhee in Heretik, 2019) extends it to other factors such as physiological, behavioral and psychodynamic. As we can see, humour can be discerned on different planes and dimensions. Humour is a relatively complex human manifestation and can be considered as an expression of the emotional state and experience, cognition and personality of the person. It can therefore be perceived as an externalization of thought, emotional, behavioral, cognitive, intellectual and other manifestations occurring within the individual itself. The complexity of humour and its multifactorial influence is based on a kind of

synthesis of stratification by Martin (R. A. Martin in Heretik, 2019, p. 23–24), which described the various dimensions of humour in connection with human personality and linked them to the understanding/perceiving of humour:

- a) cognitive ability (understanding, creation, remembering humour)
- b) aesthetic response (appreciation of humour, amusement through humour)
- c) habitual patterns of behavior (tendency to laugh often, talk and listen to jokes, entertain others)
- d) emotional, temperament traits (eg, cheerfulness, energy)
- e) attitudes (eg relaxed worldview, positive attitude to humour)
- f) cognitive strategy or defense mechanism (tendency to face adversity with humour)

The combination of the above definitions and concepts is offered by Heretik (2019), who views humour as a superior term for mental phenomena that are closely related to our perception of what is ridiculous. On the other hand, a sense of humour is something that is highly individual and reflects the individual themselves. He also distinguishes humour into situational, visual and verbal.

Dramatherapy can be included in expressive therapies and can be further divided into clinical dramatherapy, which takes place primarily in the environment of healthcare facilities and into supportive dramatherapy, which is part of, for example, intervention by special educators (Valenta, 2011). According to ADČR, dramatherapy in the Czech Republic is defined as “a psychotherapeutic approach using theatrical means to find a favorable balance in the mental and physical field or in relationships or with the intention of personal development. The focus of dramatherapy is the process associated with the experiences of creation based on metaphor, imagination, projection, interactions and group dynamics through which emotional, rational, sensory and somatic levels are interconnected...” (Association of Dramatherapists of the Czech Republic, 2016)

Dramatherapy can be further defined by the key processes described by Jones (1996). The key processes can be considered as a pillar of dramatherapy and at the same time, as the name itself suggests, a detailed description of the process. As Šílarová and Vávra (2017) write, key processes are central to the basal understanding of the process and its grasp. The key process is not represented by individual methods or techniques, but it describes the phenomena and events that dramatic reality offers us and allows us to build a dramatherapy process. Jones (1996) identified nine key processes that are repeated in each dramatherapy intervention. The description of the key processes came from a detailed analysis, not only that it gives us a description of the process, but also the kind of feedback check where we can identify whether it really is dramatherapy. Dramatherapy intervention can thus be defined and identified by the following nine key processes: dramatic projection, drama therapy empathy

and distance, role play and personification, viewer interaction and active testimony, embodiment, play, transfer to life, change, therapeutic-theater process (Jones in Valenta et al., 2017). The process and the game process in general are very crucial in the process. Huizinga (1971) describes the game as a voluntary activity that has fixed boundaries over time and space. These boundaries are voluntarily accepted by everyone in the game process. The game has a goal in itself and is accompanied by a feeling of joy, tension, and at the same time it “exists” in a space of other existence than the real world. A similar phenomenon is described by Csikszentmihalyi (2015), who links the game process and the game itself with the concept of flow. This concept describes the state in which the internal and external conditions are interconnected, which makes the state known as flow. In this state we find ourselves in a fictional world where time and reality are of different dimensions. In this state of flow there are feelings of happiness and demonstrable personality growth (Csikszentmihalyi, 2015). In the above, we can understand dramatherapy intervention and its complexity and intricacy. The intervention can be related both to an individual intervention started and ended in a time of, for example, one day, as well as to an intervention within the long-term process of dramatherapy.

The aim

The aim of the research is to describe humour in dramatherapy intervention in persons with addiction within the dramatherapy process. Both psychiatric hospital patients and drama therapists are involved in the process as they interact with each other. This factor is quite important, since dramatherapists often bring topics and enter the process of play and improvisation with clients. Mutual active participation in the process of dramatherapy and authenticity is one of the distinctive features of dramatherapy. To enter a dramatic reality, the authenticity and active presence of both drama therapists and clients is essential. Thanks to this intersection, there is room for the functioning of phenomena such as intersubjectivity and creativity. These two phenomena are then reflected in how clients and drama therapists enter the playing area and how they handle them for their own personal benefit, benefit to the community and work with personal topics. The research does not aim to provide a comprehensive overview of the phenomenon of humour in dramatherapy, but rather to reflect and highlight the relationship of humour in dramatherapy intervention in persons with addiction between observation of dramatherapists reflecting clinical practice and the perception of patients at Psychiatric Hospital Kroměříž. This mutual look and its subsequent intersection will allow a better understanding of how humour appears in dramatherapy. The aim of the research is to understand, through content analysis, the role humour plays in the dramatherapy process and how it is seen by both parties involved.

2 Methods

The aim of this research was to investigate the perception of humour in dramatherapy intervention in addicted persons. In this case, the research group consisted of a heterogeneous group of persons over 18 years of age who were patients of Psychiatric Hospital Kroměříž at the toxicological rehabilitation ward. All patients were admitted to a psychiatric hospital because of a diagnose of a mental disorder and a behavioral disorder caused by the use of psychoactive substances, defined in ICD-10 under code F10–19. Within the ward where the researchers realize dramatherapy, these are patients with non-alcohol addiction related to the use of psychoactive substances. Before completing the questionnaire, each patient attended at least two dramatherapy sessions. Overall, the questionnaire was administered twice, with the group slightly differing in both cases due to the fact that the ward where patients are treated is open and therefore the patients fluctuate. The questions for the questionnaire arose from practice and from specific dramatherapy intervention, when researchers used projective sculpture method and subsequent verbalization when working with clients. Emunah (in Johnson, Emunah, 2009) mentions this method, for example, as an opportunity to externalize emotions and feelings and translate them into a comprehensible language. Sculpture according to Volkas (in Johnson, Emunah, 2009) can also serve to deconstruct and discover unconscious forces and to become conscious. Jones (2007) describes embodied work through sculpture, and Landy (1996) uses sculpture for a test based on a role taxonomy. As we can see above, this method is widely used by dramatherapists for the initial exploration of client topics. The method was intentionally chosen because it met the conditions of the ward and did not violate its Code of Ethics. Within the sculpture, its verbalization and externalization of patients' emotions and feelings, there was a recurring phenomenon and a description of similar topics related to humour. These topics were used by dramatherapists to develop a simple questionnaire to verify the presence of topics in the group. Following the example of Grainger (1999), the themes of sculpture were grouped into four categories. These categories were simplified and adapted to the needs of the questionnaire and patients of Psychiatric Hospital Kroměříž. The methods of data collection were chosen for the purposes of the research to cover the widest possible field and thus bring the researchers the closest possible picture of the studied phenomenon. The sculpture method mentioned above was used first. Another method was a questionnaire with open questions that were extracted from the sculpture data collection method. The last two methods were the observation and narrative description of the dramatherapy intervention performed by the dramatherapists/researchers.

Former categories originated from sculpture	Transformed category to a question to a client
Humour in dramatherapy	How would you describe humour in dramatherapy?
Specifics of humour in dramatherapy	If there is humour in dramatherapy, how do you personally perceive it?
Humour in dramatherapy in difficult situations and topics	Do you think that humour in dramatherapy can help you anyhow?
Humour in the collective work in community	Do you think that humour is somehow beneficial in building a community and working with dramatherapists? And how?

Figure 1: *Categories and questions from the questionnaire*

A total of 18 people answered in the first administration and 16 in the second. In total, 34 persons participated in the questionnaire survey. Other subjects who participated in the research were dramatherapists themselves, who recorded field observations in a record sheet and also used a narrative description of dramatherapy intervention. Dramatherapists consisted of two men and one woman. These observations and narrative description of the dramatherapy intervention have been codified and summarized in a separate set to avoid misrepresentation of results and are included for comparison with the results of the patient questionnaire. The contents examined in the research were pre-defined in accordance with the methodology used. For the purposes of the research, the content was defined for the presence of humour in dramatherapy and then on the role of humour in dramatherapy intervention. These contents were predetermined and strictly adhered to. Encoder reliability was ensured by a double check, where the analyzed materials were always coded independently by two researchers. The resulting codes thus intersect the independent operationalization of data from the perspective of both encoders.

The data were processed using content analysis, which is based on the non-positivist tradition of research (Sedláková, 2014). Its strength lies mainly in the possibility of examining a large set of data or text and subsequently codifying it to create a link between two or more variables. This methodology was chosen for its ability to bring order into social phenomena, which are often difficult to grasp and classify. The method belongs to quantitatively oriented methodologies, however in the coding phase, it is possible to turn to qualitatively oriented coding. For our purposes it is defined for the examination of contents and their general quantification. Data is presented in a simple enumeration, where researchers quantify the number of responses in each code topic. Furthermore, the research is generally presented and does not imply a valid intent as the amount of data does not allow for validity. It should also be noted that this research does not aim at this.

The limits of content analysis consist mainly in exploring meanings that are culturally, socially and contextually conditioned. In the process of social and media construction of reality, these meanings are constantly changed, negotiated, confirmed,

built and reproduced, which makes their unambiguous definition almost impossible. A big limit is the non-variability of data, which is also based on the methodology used (Sedláková, 2014). The researchers were aware of this limit from the beginning and counted on it. This research study does not aim to comprehensively map the entire phenomenon of humour in dramatherapy intervention, but rather to verify the need and observation of clinical practice. The primary objective of this research study is to accentuate the topic to verify that it is sufficiently supportive for further exploration on a larger scale. At the same time, the data processed within the research study will serve for compiling a more comprehensive quantitatively oriented research, which aims to work with both the validity and reliability of the data so that they can be verified internationally.

3 Results

In this section we will look at the analysis of the data obtained by codifying the questionnaires. The aim of the research was to find out whether the accentuated topics related to humour will be repeated in dramatherapy intervention. Although the questions in the questionnaire were aimed at humour and drama therapy, patients had the opportunity not to answer the question. In all cases, patients completed the questionnaire completely and therefore no question was left unanswered. Patient responses were codified and operationalized and categorized into categories where the individual categories summarize the codes obtained from Psychiatric Hospital Kroměříž patient responses. First of all, we present a simple list of the codes that came from the content analysis of the questionnaires and the number of responses:

a) Humour and its perception – 16 answers in given code
b) Humour and self-exploration – 17 nswers in given code
c) Humour and distance – 8 answers in given code
d) Humour and its influence on group dynamics – 30 answers in given code
e) Humour as escape and relief – 22 answers in given code
f) Immediate effects of humour on a person – 35 answers in given code

Figure 2: Codes from questionnaires and the number of answers

The total number of responses in each code is 128, but this is not a valid number. This number is for reference only. Also, this figure does not mean the total number of responses from the questionnaire, as some replies were discarded due to irrelevance to the topic of the research. The table below provides an overview of the code comparison and the quantified representation of responses. As we can see, the most answers are in the code called the immediate effects of humour on the person, which

constitutes a significant contrast to the code humour and distance which is on the opposite spectrum and the least number of responses.

As we mentioned, in a separate list we bring observations of dramatherapists/researchers, which were also categorized into individual codes:

a) Patients use humour to manifestation of topics related to sexuality
b) Patients through humour manifest using addictive substances: 1. fears and worries; 2. obtaining attention; 3. situations from the time before abstinency and treatment
c) Through humour patients reflect difficult situations in treatment
d) Humour as escape from the topics, problems
e) Humour which deepens therapeutic relationship (humanization of the process)
f) Humour as an integral part of dramatic reality
g) Humour as a mechanism to handling shyness, embarrassment and awkwardness (with respect to specificity of dramatherapy – expression, play role, improvization, play)
h) Support of cohesion in the group (humour allows to laugh together)

Figure 3: Individual codes obtained by operacionalization from field observation and narrative description

The following table compares the codes in Table 2 and Table 4, which are used to compare the codes to each other. We have compared the codes and analyzed their meaning in order to be able to present the intersection or the difference. Individual codes are listed under the appropriate letter they were marked with.

Figure 2: Codes from questionnaires and number of answers	Figure 3: Individual codes obtained by operacionalization from field observation and narrative description
(b)	(a), (b)
(d)	(e), (h)
(c), (e)	(g)
(f)	(c), (b)
(c), (e)	(d)

Figure 4: The intersection of the codes in Figure 2 and Figure 3

4 Discussion

The summary presentation of the codes gives us a rough idea of the perception of humour in the dramatherapy intervention in PH Kroměříž at the toxicorehabilitation ward. The data obtained represent a subjective perception of humour from the perspective of clients/patients and dramatherapists/researchers. This view clarifies the intervention process and explains how humour manifests, what role it plays in

dramatherapy intervention and how we can use it for the process itself. It is important to note that our aim was not to give an exhaustive overview, but rather to find and find out how to deal with the phenomenon of humour, and last but not least, the research study also served as the first mention on the topic of the relationship between humour and dramatherapy.

Significantly most distinct was the topic related to humour and its immediate effects on the person. We believe it is precisely because of the specifics of humour and its perception at various levels. The research also shows us that although dramatherapists and clients in humour “met”, each of them perceived it slightly differently and completely subjectively. This finding seems evident and authors such as Martin (2018) or Heretics (2019) confirm it in the field of psychology, but in the field of dramatherapy this topic has not yet been thoroughly investigated, and therefore we present this research. The second most important intersection appears to be humour and its influence on group dynamics, which is also emphasized by dramatherapists themselves. Dramatherapists accentuate this area and mention above all the influence on group cohesion, relaxation of tension and deepening of the therapeutic relationship. This phenomenon can be seen above all in the manifestation, when therapists and clients are present together in humour and experience the aforementioned state of flow (Csikszentmihalyi, 2015). In direct opposition to being together is the use of humour as a form of escape. This phenomenon has been observed and mentioned many times by dramatherapists. From the clients’ point of view, this phenomenon is described in the categories Humour and distance and Humour as escape and relief. The specific code is then Humour and self-expression. This phenomenon shows a high degree of subjectivity and at the same time self-reflection by clients.

Probably the most significant output of the research is the comparison of codes from the perspective of clients/patients and dramatherapists/researchers. As we can see the codes intersect in almost all cases and can be compared with each other. One of the things that is involved in this is undoubtedly mutual consent to the entry of all involved in the world as if. As we mentioned in the dramatherapy process, both clients and dramatherapists are involved, which undoubtedly affects the perception of the phenomenon of humour in a given group, time and space. Humour is an integral part of dramatic reality. This code could only be found on the side of dramatherapists/researchers. This is mainly due to a greater understanding and ability to reflect the process on the part of dramatherapists. From the point of view of researchers, humour within a dramatic reality proves to be a relatively important element that should be further expanded and explored in more detail.

5 Conclusions

The aim of the research study was to provide a better picture of the topic of humour in dramatherapy intervention in addicted persons. The data that was used present results from both perspectives of the dramatherapy process and thus allow to see the whole process more comprehensively. Given the nature of the humour theme, it is difficult to completely objectify all data.

Although the analysis presents results from both perspectives of the survey, both dramatherapists and clients, we can see their intersection. Researchers see this intersection as the greatest benefit of the research study. At least in part, it shows us the nature and position of humour in dramatherapy and reveals more its benefits. Although we presented results from two different perspectives, involved in one process, we can observe some sort of tuning or congruence in the perception of humour. Humour has a significant impact on group dynamics and on the client themselves. This was shown both from the perspective of dramatherapists and clients. This shows us how humour can be perceived in the treatment process. In this respect, we can say that the goal of the researchers has been fulfilled and the role of humour in the therapeutic process, relationship and intervention has been better described. We also managed to fulfil the goal and bring a view from both sides of the process of both dramatherapists and clients/patients of PH Kroměříž.

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Does cochlear implantation influence vestibular function and balance control?

(overview essay)

Kristína Tománková

***Abstract:** The contribution presents a literary review of the facts about cochlear implantation (CI) in association to balance control from studies over the past 5 years. CI has the potential risk for vestibular system and its functions. The vestibular system plays the main role in balance tasks, f. e. postural control, balance and spatial orientation. Vestibular problems have been reported after CI, but the literature indicates major discrepancies in the reported clinical impact. The aim of the contribution is to summarize studies that ask whether CI has an undesirable, improved or any impact on vestibular function and balance control.*

***Keywords:** cochlear implantation, vestibular function, balance, postural stability*

1 Introduction

The peripheral auditory analyzer, the inner ear, is stored in the temporal bone. It is a tube twisted into a rising spiral. The human ear snail has 3.5 threads and a length of 35 mm. The spiral tube is longitudinally divided into two floors (scala vestibule and scala tympani) by a cochlear septum called a scala. The organ of Corti is located on the basilar membrane. It is a membranous tunnel at the bottom with bearing cells that allow oscillation. The upper part of the labyrinth consists of three semicircular canals. Their extended parts register rotational movements of the body. Other parts of the vestibular system are two gravity vesicles (utricle and saccule). These parts transmit biopotential changes to the effectors of the equilibrium system (Hahn et al., 2019). The close anatomical connection of the auditory and equilibrium parts of the inner ear predisposes these areas in pathological frame to a common symptomatology. Rehabilitation of deafness is a standard clinical procedure, today. A child who is

born deaf or older individuals who lose their hearing has a very effective opportunity to return valuable auditory communication. The cochlear implant consists of an outer part (microphone, processor, power source) and an inner part (receiver, electrode, active intracochlear electrode unit). The microphone receives an audio signal. The audio signal with special software is processed in the processor and sent by high-frequency transcutaneous transmission to the receiver implanted in the temporal bone. The receiver sends a signal in the form of electrical pulses to the active electrode stored in the scala tympani of the inner ear. The electrical signal stimulates ganglion cells in the spiral ganglion cochleae (Corti) along the modiolus. The signal utilizes the tonotopic distribution of the ganglion cells along the cochlea and the speed of stimulation to optimally stimulate the auditory nerve. The signal is led along the auditory nerve to auditory centers in the brain stem and further to the auditory center in the temporal lobe. Indications for CI consist of both adults deaf (postlingually) due to inflammation, trauma, tumor, progressive perceptual disorder and so on. In these patients, it is relatively easy to determine the degree of hearing impairment and decide on the indication for CI. Another group is deaf older children and adults (prelingually). In the past, prelingual deafness of adults was a clear contraindication for CI. Today the criterion does not apply strictly. Prelingually deaf children include mainly children from 0–6 months. It is optimal to have the child implanted at the age of 1–2 years (Kubátová & Profant, 2012). The equilibrium mechanism has three basic functions in humans: a, Transmission of information from the vestibular inner ear system to those parts of the CNS that are responsible for controlling of spinal reflexes and that read just muscular activity, thereby ensuring upright posture; b, By guiding vestibular information to eye control centers, the position of the eyes is stabilized during head movement, thus reducing the displacement of the fixed point on the retina; c, Leading vestibular information to postural muscles and perception and processing of feedback information from them. The reactions of these structures involved in providing equilibrium are feedback. The equilibrium mechanism ensures balance and plays a great role in the subjective survival of movement and orientation in space. The vestibular receptors are in the upper part of the membranous labyrinth, in the vestibule and semicircular ducts, where there are five intrinsic strange elements of the equilibrium system (Hahn et al, 2015).

2 Selected current research surveys in the issue

2.1 Research surveys with reported undesirable impact of CI on the vestibular system and balance control

Wolter, Gordon, Papsin et al. (2015) determines the role of vestibular and balance dysfunction in children with cochlear implant failure. Thirty-five children with CI failure were compared to 165 children who did not experience CI failure. Vestibular function was compared between groups by horizontal canal function (measured by caloric, rotational, video Head Impulse Testing [vHIT]), saccular function (vestibular evoked myogenic potentials [VEMP]), and balance (measured by Bruininks-Oseretsky Test [BOT-2]). Twenty-one patients completed vestibular and balance testing. Patients with CI failure demonstrated significantly more abnormal horizontal canal function than those who did not experience CI failure (caloric: 81 vs. 47%, $p = 0.004$; rotational/vHIT: 71 vs. 35%, $p = 0.001$). Absence of bilateral horizontal canal function increased the odds of CI failure 7.6 times. A greater proportion of children with CI failure had abnormal saccular function compared to those without CI failure (81 vs. 46%, $p = 0.003$). Children with CI failure had significantly worse balance (BOT-2 score: 7.8) than children who did not experience CI failure (BOT-2 score: 12.2) ($p < 0.0001$). Vestibular end-organ dysfunction and its resulting balance impairment have been identified as important risk factors for CI failure in children.

Janky & Givens (2015) aimed the study on determining of age-related changes in peripheral vestibular tests occur; quantifying peripheral vestibular function in children with normal hearing and children with cochlear implantate; and determining if amount of vestibular loss predicts visual acuity and balance performance. Eleven children with cochlear implantation and 12 children with normal hearing completed the following tests of vestibular function: ocular and cervical vestibular evoked myogenic potential to assess utricle and saccule function, and the video head impulse test to assess semicircular canal function. The relationship between amount of vestibular loss and the following balance and visual acuity outcomes was assessed (dynamic gait index, single leg stance, the sensory organization test, and tests of visual acuity, including dynamic visual acuity and the gaze stabilization test). There were no significant age-related changes in peripheral vestibular testing with the exception of the cervical vestibular evoked myogenic potential latency, which was moderately correlated with age. Children with cochlear implantation had significantly higher rates of vestibular loss for each test of canal and otolith function. Amount of vestibular loss predicted performance on single leg stance, the dynamic gait index, some conditions of the sensory organization test, and the dynamic visual acuity test. Age was also a contributing factor for predicting the performance of almost all outcomes. Preliminarily, children with vestibular loss do not recover naturally to levels of their healthy

peers, particularly with activities that utilize vestibular input. They have poorer visual acuity and balance function.

Chen, Chen, Zhang et al., 2016 studied the influence of cochlear implantation on vestibular function in patients with severe and profound sensorineural hearing loss, and to analyze a possible correlation between the changes in vestibular testing and post-operative vestibular symptoms. Thirty-four patients were evaluated for vestibular function using the cervical and ocular vestibular-evoked myogenic potentials (cVEMP and oVEMP, respectively), and 29 patients underwent caloric tests pre-operatively and 4 weeks post-operatively. Before surgery, the cVEMPs were recorded bilaterally in 22 patients, unilaterally in eight patients, and absent bilaterally in four patients. The cervical and ocular vestibular-evoked myogenic potentials oVEMPs were recorded bilaterally in 19 patients, unilaterally in six patients, and absent bilaterally in nine patients. After implantation, the cVEMPs were absent in 10 patients and the oVEMPs were absent in seven patients on the implanted side. Caloric tests demonstrated canal paresis in 17 patients, and normal responses were recorded in 12 of the 29 patients pre-operatively. There was a significant decrease post-implantation in the ear implanted, with the exception of two patients. Two patients presented with vertigo and another two patients reported slight unsteadiness post-operatively, but all symptoms resolved within 7 days. The impaired vestibular function did not correlate with vestibular symptoms, age, or gender. Function on the contra-lateral side remained unaffected.

Oyewumi, Wolter, Heon et al. (2016) determined if bilateral vestibular dysfunction can be predicted by performance on standardized balance tasks in children with sensorineural hearing loss (SNHL) and cochlear implants. In study were pediatric patients (4.8–18.6 years) with profound SNHL using CIs. Vestibular end-organ (horizontal canal and otoliths), and balance were assessed. Comparison of balance skills, measured by the Bruininks Oseretsky Test of Motor Proficiency II (BOT-2), was performed between two groups of children with SNHL and CI: 1. total bilateral vestibular loss (TBVL) ($n = 45$), and 2. normal bilateral vestibular function ($n = 20$). Balance as measured by the BOT-2 balance subtest was significantly poorer in children with TBVL than those with normal vestibular function ($p < 0.0001$). “Eyes closed” tasks best identified children with TBVL having the highest sensitivity and specificity. One-foot standing eyes closed was found to have the best performance as a screening tool for TBVL using a timed cutoff of 4 seconds. A brief in-office screen of balance function using one of the BOT-2 balance subtest tasks, one-foot standing eyes closed, is able to identify children at risk of total bilateral vestibular loss with excellent sensitivity and specificity and should be used to screen for total bilateral vestibular loss in all children presenting with sensorineural hearing loss.

The study of Ebrahimi, Movallali, Jamshidi et al. (2016) compared the static and dynamic balance performance of deaf children with and without cochlear implants.

This is a cross-sectional study of 145 school children, aged between 7 and 12 years comprising 85 children with congenital or early acquired bilateral profound sensorineural hearing loss (the hearing loss group) and 60 normal hearing age-matched control counterparts were assessed using the balance subtest of Bruininks-Oseretsky test of Motor Proficiency (BOTMP). The hearing loss group, 50 without cochlear implants (the non-implant group) and 35 of them with unilateral cochlear implants (the implant group) were recruited from schools for the deaf and normal hearing children (the control group) randomly selected from two randomly selected elementary schools of Tehran city. The total score of deaf children especially the implant group were significantly lower than the control group ($P < 0.001$). The balance performance of the control group was better than the implant group in all of the items as well as the non-implant group except the fourth tested item (walking forward on a line) ($P < 0.05$). The balance score of the implant group was significantly lower than the non-implant group except for the third tested item (standing on the preferred leg on a balance beam with eyes closed). The findings suggested that deaf children, specifically those with cochlear implants are at risk for motor and balance deficits.

Nair, Gupta, Nilakantan et al. (2017) identified vestibular dysfunction in children after cochlear implant surgery and studied the utility of static posturography in evaluating vestibular function in children. A prospective study was carried out on 25 children between 2 and 7 years of age with sensorineural hearing loss with no overt vestibular dysfunction. All children underwent static posturography using a static platform with foam. The centre of pressure (COP) shift was recorded as statokinesiogram on the software and the mean vestibular, visual and somesthetic scores were obtained. Cochlear implantation surgery was done with insertion of Med-El Pulsar standard cochlear implant with 12 twin electrodes. Children were evaluated again after 4 weeks of CI surgery (2 weeks after switch on) with static posturography on the same SPS software. The vestibular system was at high risk of injury leading to vestibular dysfunction in children during CI.

Dagkiran, Tuncer, Surmelioglu et al. (2019) evaluate all five vestibular end-organ functions (lateral, anterior, posterior semicircular canal, utricle, and saccule) and investigate the relationship between Dizziness Handicap Inventory (DHI) and vestibular functions prior to cochlear implantation and at postoperative day 3 and month 3. A total of 42 patients (age 16–70 years) with normal vestibular functions preoperatively and undergoing unilateral cochlear implantation were included in this prospective descriptive study. Video head impulse test (vHIT) for three semicircular canal (SSC) functions, ocular vestibular-evoked myogenic potential (oVEMP) for utricle function, cervical vestibular-evoked myogenic potential (cVEMP) for saccule function and DHI for subjective vertigo symptoms were performed prior to CI and at postoperative day 3 and month 3. There was a significant impairment of vestibular function in 12 patients (28.5%) on the implantation side and significant DHI increase

was observed in 13 of 42 (30.9%) patients at postoperative day 3 after CI ($p < 0.05$). We found SSC dysfunction in 7 patients (16.6%) who underwent observation with vHIT, saccule dysfunction in 8 patients (19%) with cVEMP and utricle dysfunction in 5 patients (11.9%) with oVEMP on the operated side 3 days after surgery ($p < 0.05$). Posterior SSC functions (5 patients) were more affected than lateral SSC functions (3 patients). At postoperative month 3, six patients (14.2%) still had deteriorating results in the objective tests and significant DHI increase was continued in 4 (9.5%) patients ($p < 0.05$). The deterioration in vHIT continued in only 1 (2.3%) patient ($p > 0.05$). The deterioration in cVEMP continued in 5 (11.9%) patients ($p < 0.05$). The deterioration in oVEMP continued in 2 (4.7%) patients ($p > 0.05$). There was a significant correlation between DHI and objective vestibular tests both in the early and late postoperative period ($r = 0.795$; $p < 0.05$). This study showed that both canal and otolith functions can be damaged after cochlear implantation especially in the early postoperative period. Surprisingly, posterior SSC functions were more affected than lateral SSC.

2.2 Research surveys with reported improvements after cochlear implantation on the vestibular system and balance control

The pilot study of the Parietti-Winkler, Lion, Montaut-Verient et al. (2015) aimed to assess the effects of unilateral cochlear implantation on the modalities of balance control and sensorimotor strategies. Posturographic and vestibular evaluations were performed in 10 patients (55 ± 20 years) with profound hearing loss who were candidates to undergo unilateral multichannel cochlear implantation. The evaluation was carried out shortly before and one year after surgery. Posturographic tests were also performed in 10 age-matched healthy participants (63 ± 16 years). Vestibular compensation was observed within one year. In addition, postural performances of the patients increased within one year after cochlear implantation, especially in the more complex situations, in which sensory information is either unavailable or conflicting. Before surgery, postural performances were higher in the control group compared to the patients' group. One year after cochlear implantation, postural control was close to normalize. The improvement of postural performance could be explained by a mechanism of vestibular compensation.

Mazaheryazdi, Moossavi, Sarrafzadah et al. (2017) present study which aimed to evaluate the postural control perturbations by the center of pressure parameters in two main approaches, cochlear implant turned "on" and "off". They included 25 children aged 8–10 years with unilateral cochlear implants and bilateral vestibular hypofunction deficit. To evaluate the postural function, each children was asked to stand on the force plate under three different conditions and cochlear implant turned

“on” and “off”: Condition (A) double stance from open eyes to closed eyes; Condition (B) double stance with open eyes engaging in the dual task and Condition (C) From double leg stance to one leg stance with open eyes for assessment of dynamic postural control. Also to calculate the center of pressure parameters, they designed new software for the force plate. In condition A, although the results demonstrated an overall reduction in the mean of center of pressure parameters when the cochlear implant was “on”, only the significant differences were seen in mean and standard deviations for anterior-posterior displacement, mediolateral displacement, area and mean velocity in open eyes. In condition B, no significant difference was found between “on” and “off” cochlear implant in single or dual-task situations. In condition C, mean velocity variable demonstrated a significant difference in the cochlear implant “on” condition in double leg stance only. Also, anterior-posterior displacement demonstrated a significant difference, when the cochlear implant was turned “on” in one leg stance situation. The results of study show that auditory information can improve postural stability and reduce body sways in different situations as an underlying system for reinforcement of the postural control in children without complete normal balance subsystems.

Zur, Ben-Rubi Shimron, Leisman et al. (2017) described the effect of vestibular rehabilitation on anxiety, dizziness and poor balance that developed after cochlear implant surgery. A 54-year-old woman, with profound hearing loss since the age of 2 years, underwent right CI surgery 2 years previously. On implant activation, the patient immediately felt dizziness and imbalance, which affected the ability to perform activities of daily living and increased anxiety to where the patient considered the cochlear implant removal. Prior to vestibular rehabilitation the patient was evaluated with the Dizziness Handicap Inventory and the Visual Vertigo Dizziness Questionnaire and clinically with the Zur Balance Scale and Video Head Impulse Test. The patient underwent 14 VR sessions over 4 months that included compensation, adaptation and habituation exercises. After vestibular rehabilitation the patient was able to maintain good balance while using the CI. Dizziness and anxiety improved dramatically. This report increases awareness that a cochlear implant could compromise balance, which can be overcome with personalized vestibular rehabilitation.

The effect of audition on gait, a dynamic task also linked to fall risk, has not been fully examined in study of Weaver, Shayman, & Hullar (2017). Auditory input in people with hearing impairment will improve balance while walking. Several studies have found auditory cues to improve static balance measured on a sway platform. If a positive effect were shown between audition and balance, it would further indicate that improving hearing could also improve balance. In this study inertial sensors were quantified gait parameters of 13 bilateral hearing aid users and 12 bilateral cochlear implant users with their hearing devices on and off. Outcome measures included gait velocity, stride length variability, swing time variability, and double

support phase. Group analysis of each of the gait outcomes showed no significant differences between the aided and unaided conditions in both the hearing aid and cochlear implant groups. Gait velocity, an outcome most strongly linked to fall risk had 95% confidence interval differences of -2.16 to 1.52 and -1.45 to 4.17 cm/s in hearing aid and cochlear implant users, respectively (aided versus unaided condition). There was considerable variation among participants with some individuals improving in all four parameters. The overall findings were not statistically significant, however, a small subset of our population improved clinically across several outcomes. This demonstrates that audition may have a clinically beneficial effect on balance in some patients.

Buhl, Artemiev, Pfiffner et al. (2018) studied dynamic postural stability before and after cochlear implantation using a functional gait assessment (FGA). As a second, they evaluate the correlation between loss of residual hearing and changes in dynamic postural stability after cochlear implantation. Candidates for first-sided cochlear implantation were prospectively included. The FGAs and pure-tone audiograms were performed before and 4–6 weeks after cochlear implantation. Twenty-three subjects were included. Forty-eight percent ($n = 11$) showed FGA performance below the age-referenced norm before surgery. One subject had a clinically relevant decrease of the FGA score after cochlear implantation. No significant difference between the mean pre- and postoperative FGA scores was detectable ($p = 0.4$). Postoperative hearing loss showed no correlation with a change in FGA score after surgery ($r = 0.3$, $p = 0.3$, $n = 16$). Single-sided cochlear implantation does not adversely affect dynamic postural stability 5 weeks after surgery. Loss of functional residual hearing is correlated with a decrease in dynamic postural stability.

Wisnomsirskaa, Zdrodowskaa, Tacikowskab et al. (2019) studied standard cochlear implantation influence on postural stability in patients with hearing loss. The study included 21 adult individuals qualified to undergo cochlear implant due to severe or profound hearing loss. Participants were qualified for both groups by a physician based on an interview, an otoneurological examination and vestibular tests. The first group included patients without vestibular dysfunction, whereas the other group consisted of persons with vestibular dysfunction. The research methodology included medical examinations, anthropometric measurements and stabilometry on the Biodex Balance System SD (BBS) platform. The examinations were carried out twice, i. e. prior to and 3 months post implantation. The recorded data was compared between the first and the second examination. Study showed that 52.4% of the participants obtained results within the norm, while 47.6% scored below it. The comparison of stability indices of the examined individuals, with and without vestibular dysfunction, did not reveal statistically significant differences. The only difference was the anterior-posterior stability index assessed in static conditions. Three months after the implantation, no changes in the majority of indices were noted, with the exception

of anterior-posterior stability index, which improved following the implantation. Cochlear implant does not affect postural stability changes in the study participants.

2.3 Research surveys with reported featureless impact of the cochlear implantation on the vestibular system and balance control

Ajalloueyan, Saeedi, Sadeghi et al. (2017) realized a prospective cohort study, 27 children with bilateral profound hearing loss (all candidates for cochlear implantation) were evaluated for their vestibular function before and after cochlear implantation. Vestibular evaluations consisted of Vestibular Evoked Myogenic Potentials, caloric testing and the Head-Impulse Test. Mean age at the time of cochlear implantation was 27.19 months. Without considering vestibular evaluation results, one of the ears was selected for surgery. Vestibular tests after surgery were not indicative of any statistically significant change in vestibular system or balance. These limited data show that cochlear implantation did not impair the vestibular system of these patients. By the results of our study it is possible to conclude that round window implantation does not have any disturbing impact on vestibular function in children.

The objective of study of le Nobel, Hwang, Wu et al. (2016) was to conduct a pilot study assessing the effects of unilateral cochlear implantation on balance and the vestibular system in post-lingually deafened adults. Twelve patients were included in this pilot study and were assessed pre-operatively and at immediate, 1 week, and 1 month post-operative intervals. Assessments consisted of the dizziness handicap inventory (DHI), subjective visual vertical (SVV), and timed up-and-go testing (TUG). When applicable, testing was repeated with the cochlear implant on and off. Many patients were found to have deviated SVV at pre-operative and post-operative assessments. However, statistically significant changes were not seen when comparing pre-operative and post-operative SVV or when comparing SVV with the cochlear implant on and with the cochlear implant off. DHI was found to improve in five patients and worsen in two patients, however, no statistically significant change was found in DHI scores or with TUG testing. This current pilot study does not indicate that cochlear implant surgery or implant activity influence vestibular or balance function, however, this pilot study is underpowered and greater numbers of patients need assessment to confirm these findings.

The goal of the present study of Maheu, Pagé, Sharp et al. (2017) was to investigate the impact of unilateral cochlear implantation on postural control in relation to the vestibular status before cochlear implant surgery. They recruited 17 participants (four cochlear implant candidates and 13 hearing controls) and performed complete vestibular evaluation (cVEMP, oVEMP, vHIT) and postural evaluation using a force platform, prior and following unilateral cochlear implant surgery. Study suggests

that an increase in postural sway following cochlear implant was present only for the participants that received the implant in the ear with the better vestibular function. cVEMP and oVEMP measures in the implanted ear prior to unilateral cochlear implantation may help to predict postural control performance following surgery. A thorough evaluation of the vestibular function, as described in the present study, could not only be helpful to make a more accurate prognosis of the risks of fall following cochlear implantation, but also to provide proper vestibular rehabilitation for at-risk patients.

The aim of the meta-analysis of the Ibrahim, Daniela da Silva, Segal et al. (2017) is to quantify the effect of cochlear implant before and after surgery on the outcomes of vestibular tests, postural stability, and subjective perception of dizziness. They evaluate the effects of cochlear implant surgery on vestibular function in adult patients (≥ 18 years) with sensorineural hearing loss who underwent unilateral or bilateral implantation. Published studies of adult patients who received unilateral or bilateral cochlear implants and whose vestibular function or postural stability was assessed before and after surgery. From each study, test results before and after surgery were compared, for the following five tests: clinical head impulse test (HIT); bi-thermal caloric irrigation of the horizontal semicircular canal; vestibular evoked myogenic potential (VEMP); dizziness handicap inventory (DHI); and computerized dynamic posturography (CDP). Twenty-seven studies met all inclusion criteria. Most studies performed either bi-thermal caloric irrigation and/or VEMP, with fewer studies investigating changes in HIT, posturography or DHI. CI surgery significantly affected the results of caloric and VEMP testing. However, HIT results, posturography, and DHI, scores were not significantly affected after CI surgery. CI surgery has a significant negative effect on the results of caloric as well as VEMP tests. No significant effect of CI surgery was detected in HIT, posturography, or DHI scores. Overall, the clinical effect of CI surgery on the vestibular function was found to be insignificant.

The relation between well-controlled auditory stimulation through cochlear implant and the body balance has been sparsely investigated by Oikawa, Kobayashi, Hiraumi et al. (2018). The purpose of this study was to evaluate the body balance function of cochlear implant patient's with- and without-sound in anechoic sound-shielded room. They recorded 8 experienced CI recipients and 8 young normal-hearing volunteers. All subjects were assessed using posturography under 4 conditions: 1. eyes open with-sound, 2. eyes closed with sound, 3. eyes open without-sound, and 4. eyes closed without-sound. The total path length and the total area were significantly larger in the eyes closed condition than in the eyes open condition. In normal hearing subjects, the average displacement of center of pressure (COP) in the medio-lateral direction under with-sound condition was not different from that under without-sound condition. In CI recipients, the COP (Center of Pressure) significantly displaced to the cochlear implant side after the deprivation of visual

cues in without-sound condition. This shift was eliminated in with-sound condition (significant interaction among sound condition, eye condition, and between-group factor). In cochlear implant subjects, sound stimulation improves the abnormal displacement of COP in the medio-lateral direction. A posturographic study under an anechoic condition proved that sound stimulation improves body balance function in cochlear implant subjects.

Stieger, Siemens, Honegger et al. (2018) examined differences in stance and gait balance control before versus after cochlear implant surgery. Balance control of 30 cochlear implant patients (mean age 59, SD 15.4 years), receiving a first unilateral cochlear implant surgery, was measured preoperatively and postoperatively 1 month after the initial implant stimulation (2 months after surgery). Trunk sway was measured during 14 stance and gait tests using an angular-velocity system mounted at lumbar vertebrae L3. For pre- versus postoperative comparisons across all 30 patients, a nonsignificant worsening in balance control was observed. Significant changes were, however, found within subgroups. Patients younger than 60 years of age had a significant worsening of an overall balance control index (BCI) after cochlear implant surgery ($p = 0.008$), as did patients with a normal BCI preoperatively ($p = 0.005$). Gait task measures comprising the BCI followed a similar pattern, but stance control was unchanged. In contrast, patients over 60 years or with a pathological BCI preoperatively showed improved tandem walking postoperatively ($p = 0.0235$). Across all CI patients, cochlear implant surgery has a minor effect on balance control 2 months postoperatively. However, for patients younger than 60 years and those with normal balance control preoperatively, balance control worsened for gait indicating the need for preoperative counseling.

The aim of the study of Hänsel, Gauger, Bernhard et al. (2018) was to investigate both subjective complaints of vertigo before and after cochlear implantation and related vestibular diagnostic tests on cochlear implant candidates. They found 116 eligible studies investigating subjective complaints of vertigo after cochlear implantation and/or related vestibular diagnostic tests. They conducted three meta-analyses of 46 eligible studies with matched pre- and postoperative data to calculate the odds ratio of new vertigo onset, as well as the impairment of vestibular receptors measured by nystagmography and cervical vestibular evoked myogenic potentials (cVEMP). Postoperative vertigo was calculated from 95 studies and further subdivided by mean age with pooled data. They observed a significant increase in postoperative vertigo and significant impairment of nystagmography and cVEMP detection. Vertigo after cochlear implantation was reported in 9.3% of the patients with a continuous increase in patient age at surgery. In a subgroup of studies, new onset of vertigo was found in 17.4% of the patients. In addition, 7.2% of the patients had persisting vertigo complaints, whereas 11.6% described an altered vertigo quality and 7.7% had their preoperative complaints resolved. A comparison of round window approach

and cochleostomy revealed significantly increased vertigo after cochleostomy. Both insertion methods showed similar effects in nystagmography and cVEMP testing. Cochlear implantation has a significant impact on subjective vertigo and vestibular receptor function. This is affected by the patient's age at the time of surgery. The surgical technique (round window or cochleostomy) may influence the outcome, but this requires further investigation. Younger patients may compensate better following vestibular dysfunction. Peri-operative testing is required to correlate vestibular impairment and subjective complaints.

Kelly, Liu, Leonard et al. (2018) evaluated the vestibular function of children who had unilateral and bilateral cochlear implants compared with a control group of otherwise healthy children who had not been implanted. Posturography was carried out in the form of a Modified Clinical Test of Sensory Interaction on Balance using a Wii Balance Board and the Vestio App on an iPod Touch. Thirty children in total were tested, 10 children in each cohort. Results in the form of root mean square calculations were available for each child. Results showed a significant difference in the vestibular function of implanted children and the non-implanted control group ($P < 0.05$). As expected, children in all groups had more difficulty maintaining posture with their eyes closed on a compliant surface ($P < 0.05$). Thirty per cent of children with bilateral and 10% with unilateral cochlear implants were unable to complete testing. Our study demonstrates posturography as an inexpensive, easily operated tool that can be used to assess pediatric vestibular function. It showed a significant difference between the control group and the implanted groups. Further work prompted by this study will include interval post-operative testing to more accurately assess the effect that implantation has on vestibular function.

Berge, Nordahl, Aarstad et al. (2019) evaluate the association between hearing and postural balance. Patients examined for suspected vestibular disorder were included in this study. The outcome variable was postural sway measured by static posturography during quiet standing with eyes closed. The predictor variable was pure-tone average hearing threshold on the best hearing ear at 0.5, 1, 2, and 3 kHz. Covariates were age, sex, and vestibular disease or vestibular asymmetry assessed by bithermal caloric irrigation. In total, 1075 patients were included. Increased hearing threshold was a strong predictor of increased postural sway (path length) after correcting for age and sex. A 10-dB increase in hearing loss on the best hearing ear predicted a mean 6.0% increase in path length (confidence interval, 2.9–9.3%, $P < .001$). Of the covariates, increasing age ($P < .001$) and male sex ($P = .009$) were significant predictors of increased postural sway. The effect of increased hearing threshold was also significant after adjusting for vestibular disease. Increased hearing threshold was an independent predictor of increased postural instability, and this effect was strongest for the best hearing ear. Unilateral vestibular disease did not seem to explain this association

between hearing and postural balance. Reduced hearing is associated with impaired balance, and interventions to prevent falls should be considered for patients at risk.

Yong, Young, Lea et al., (2019) investigated the presence, magnitude, and clinical significance of vestibular dysfunction that occurs after pediatric cochlear implantation. Parameters that were assessed included number of patients, pre- and post-operative vestibular evoked myogenic potentials (VEMPs), head impulse testing (HIT), caloric's, and posturography, timing of pre- and postoperative testing, symptomatology, and other demographic data such as etiology of the hearing loss. Ten articles were included. Relative risk values evaluating the effect of cochlear implantation on vestibular function were calculated for VEMPs and caloric testing due to the availability of published data. I2 values were calculated and 95% confidence intervals were reported. Separate analyses were conducted for each individual study and a pooled analysis was conducted to yield an overall relative risk. Assessment on risk of bias in individual studies and overall was performed. Pediatric cochlear implantation is associated with a statistically significant decrease in VEMP responses post-operatively (RR 1.8, $p < 0.001$, I2 91.86, 95%CI 1.57–2.02). Similar results are not seen in caloric testing. Insufficient data is available for analysis of HIT and posturography. Further studies are necessary to determine the effect of cochlear implantation on objective vestibular measures post-operatively and whether any changes seen are clinically relevant in this population.

3 Conclusion

Further studies are necessary to determine the effect of cochlear implantation on vestibular functions. It is undisputed that in many cases, vestibular dysfunctions, motor and balance disabilities will occur after cochlear implantation. It is believed that the lower age of the patient may play an essential positive role in the lower occurrence of undesirable consequences of cochlear implantation, as well as in the better further development of the patient condition. In some cases, slight improvements are even possible after cochlear implantation. It is believed that this may be due to compensation, learning new movement and balance strategies (also in an effort to eliminate the possible fall risk).

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Description of chosen factors of upbringing and education of people with disabilities

Hanáková, A. et al. *Deskripce vybraných faktorů výchovy a vzdělávání u osob se zdravotním postižením*. Olomouc: Univerzita Palackého v Olomouci, 2018. ISBN 9788024452944

Reviewed by Dagmar Sedláčková

Inclusive education and, consequently, attitudes towards pupils with disabilities have recently become widely discussed topics, both among the general public and professionals involved in educational field. In this context I have experienced reading a book "*Description of chosen factors of upbringing and education of people with disabilities*" by A. Hanáková et al. Originally, due to the title of the book, I assumed that the publication would focus on the issue of the needs of children with disabilities. I supposed that it would contain a list of basic factors, which could help teachers with their decisions how to work with learners with special educational needs (SEN) in inclusive classes, providing ideas of what to consider and what to focus on to make teachers' work effective. For that reason the actual content of the book at first did not meet my expectations. Nevertheless, gradually I became interested in this publication as it presents interesting research results that may become useful in upbringing and education of these children, albeit from a different, wider perspective.

The publication is based on a three-year research that was carried nationwide in the Czech Republic from 2015 to 2017. The aim was to obtain background information to describe the concept of education and its value from the view of the adolescents with disabilities. The author's team proceeded from the assumption of a different conception in the case of pupils with physical or sensory disabilities on one hand and intact pupils on the other hand. Except obtaining data and building the value concept of education the researchers' additional aim was to verify the applicability of the used research tool and to identify points for special-educational or psychological intervention usable for learners with physical and sensory disabilities. The 92-page publication is divided into six chapters.

The research was carried out in three stages. The first, in 2015, focused on pupils' attitudes to education. The research sample consisted of secondary school learners with physical, visual and hearing impairment and intact learners as a control

sample. The questionnaire survey examined pupils' opinions on education and the factor analysis was used to describe the results. It was found out that there were not significant differences between the opinions of the individual groups, because all of them considered education as important, valuable, a guarantee of good status in society, the way to further career and material security. Students with disabilities also conceded important financial demands of education and all groups stated that hardworking and contacts played an important role. Prevalent results of the positive contribution of education were very similar in all groups, so the authors chose for categorization the negative attitudes that were in minority. Depending on that, the following factors were defined within each cohort. Learners with hearing impairment: *"Education is expensive and it brings nothing."* *"Education is not necessary."* *"I will make a living without education."* Learners with visual impairment: *"The main thing is to be able to work."* *"Education is important for career."* Learners with physical disabilities: *"Being able to work and having contacts is important."* *"More important than education is being able to work."* Intact pupils: *"Diligence and contacts are more important than education."* *"Studies do not enrich you much, it only supports business."* This extensive chapter is well arranged, using clear tables and graphs for each item of the questionnaire. As well methodology is clearly explained and justified. Due to very similar results in all groups it is worth considering the use of more specific questions in the questionnaire, because each group of respondents face different educational problems related to a specific type of disability and its severity and the studied field plays an important role as well.

The other research project done during the following year focused on families of children with disabilities with the aim to identify the attitudes, possibilities and concerns of parents that shape the environment and its climate for education in the Czech Republic and PRC, with the Parent PARQ/Control scale of Parental Educational Styles used as a research tool. The research carried out in the Czech Republic was done with a sample of children aged 10–12 (44% intact and 56% learners with SEN – with physical, hearing and visual impairments). In the case of learners with physical disabilities the PARQ score was slightly different from the others so it can be concluded that these children perceive their fathers generally as loving ones. It was found out that there were not differences between the perception of the family environment of children with SEN and intact children, all of them perceived the family environment as favourable, supportive and open. The chapter is rather brief and the authors probably assumed at least basic knowledge of the research method of the reader and what I miss in this chapter is explaining the role of China in this research, as it is mentioned only at the beginning of the chapter, in the introduction, but it does not appear further in the text.

The third research project done in 2017 focused on teachers and intact students in order to find out teachers' feelings, attitudes and concerns associated with work with learners with disabilities and also attitudes of intact learners towards their peers with disabilities. A questionnaire surveys were carried out in both groups with following results. It was found out that the teachers were concerned about the education of learners with SEN and they felt somewhat uncertain in that field, because it was not their choice to work in inclusive environment and they felt neither sufficiently prepared for it nor sufficiently informed. Furthermore, it was found out that most of intact pupils did not have sufficient awareness of the issue of people with disabilities. 75% of them were not able to characterize disability, about a half of teenage respondents were unable to comment on the life conditions of people with disabilities in the Czech Republic and similar amount would not meet the request for assistance. 80.5% of pupils did not take advantage of extracurricular educational offers on such topic and 95.3% never used extracurricular activities focused on the field of work for people with disabilities. Overwhelming majority of intact learners did not have enough information on that issue from school and nearly all of them did not have any negative experience with people with disabilities. 73.2% found study opportunities incomparable to healthy learners and 65.7% of students could not imagine the existence and functioning of pupils with disabilities in the class. In my opinion, the facts presented in this part of the research together with the numbers point out a rather serious problem that we daily encounter in educational practice and often do not even realize its existence. It is good that scientists are interested in it, because these findings could lead to a positive change on a larger scale.

In conclusion, the book provides important information that can be beneficial both in the practice of inclusive education itself and in the professional training of future teachers. The research that focused on pupils with disabilities presents valuable information that can play role in searching for motivation of pupils with SEN and preparing them for their future career. The survey data gained in the family environment confirm that the family background is an important factor which positively influences the intervention and affects the education of children with SEN. The third stage of the research introduces important findings from the environment of teachers and intact peers. Such findings imply that for successful inclusion it is necessary to ensure that existing teaching staff are better informed, advised and supported, the problematics of education of children with SEN should be included in the training programs of students of pedagogy and due to low awareness of intact learners about this issue it is worth considering incorporating information about learners with disabilities into the curriculum to increase their competences.

Ethical principles were respected throughout the whole research project and research tools together with statistical methods are introduced and justified within

each survey. The text is clear, brief, complemented by suitable tables and graphs. The research goal was fulfilled and the book is ended by recommendations for practice.

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Special educational minimum for teachers – working with a pupil with special educational needs in a classroom

BITTMANNOVÁ, L. a kol. *Speciálněpedagogické minimum pro učitele: co dělat, když do třídy přijde žák se speciálními vzdělávacími potřebami*. 2019. Praha: Pasparta.

Reviewed by Jana Zvěďelíková

In 2019, The Publishing House Pasparta published a publication written by the collective of authors called Special Educational Minimum for Teachers – Working with a Pupil with Special Educational Needs in a Classroom. The publication consists of 157 pages and 10 chapters.

In the introduction the authors mention constantly improving diagnostics, define support measures, characterise pupils with special educational needs (SVP) and refer to the relevant legislation.

In the chapter called *Children with Specific Learning Disorders* written by Kamila Balharová we can find not only basic terminological specification and key symptoms of specific learning disorders (SPU) but also particular tips and examples of work with a pupil with SPU. The author describes what children are able to do themselves and also what they need to help with, how a child can be motivated to read, how to specifically adjust a text for pupils with dyslexia and many other tips.

The chapter *Pupil with ADHD* was written by Markéta Dobiášová. In this chapter, the author clarifies some important knowledge and thoughts which might be useful to teachers working with pupils with ADHD. The chapter contains a theoretical delineation of the issue and it also describes how the brain in people with ADHD works. The author also describes basic fundamental pillars, efficient methods and working methods in children with ADHD. Pedagogues will certainly appreciate the description of particular school problems in children with ADHD as well as proposed solutions.

The author of the third chapter called *Child with Disturbed Communicative Ability* is Hana Václavová. At the very beginning she defines a discipline speech therapy and 10 basic headings of disturbed communicative abilities (NKS). The chapter contains also particular methods by which a pedagogue appropriately sets the conditions for

the education of these pupils and also particular examples of aids. One of the sub-chapters deals with myths of the education of pupils with NKS.

Lenka Bittmannová is the author of the fourth chapter called *Pupil with Autism Spectrum Disorder (PAS)*. This chapter is focused especially on bullying of pupils with PAS and also on the prevention of bullying. There is a description of recommended attitudes towards the education of pupils with PAS and myths connected with children with PAS.

The fifth chapter dealing with talented pupils was written by Šárka Portešová. It is divided into pre-schoolers and schoolchildren. Theoretical knowledge is illustrated by particular casuistic examples. In the end of this chapter, the author deals with a legislative solution of the issue and particular methods of working with children.

The sixth chapter focuses on mentally disabled pupils. Its author is Lenka Michalíková. After the delineation of the classification of mental retardation and terms of integration, inclusion and segregation, the author deals with practical implications for the inclusion of mentally disabled pupils at common elementary schools. She emphasizes the necessity of cooperation between school and parents and also an appropriate way of assessment and motivation. There is also one case report on an unsuccessful integration of a mentally disabled schoolgirl.

Tereza Hradilová is the author of the seventh chapter called *Child with Hearing Impairment*. This chapter contains a basic theory in the wider context and there is also a description of methods of working with a pupil with hearing impairment in a classroom without the help of a special pedagogue. The author emphasizes that this issue is too wide and therefore it is necessary to study it deeply. In spite of this fact the author managed to depict the basic framework for education of pupils with hearing impairment at common elementary schools.

The chapter called *Visually Impaired Pupil* was written by Jana Janková. In this chapter we can find basic categorisation of visual impairments, myths about visual impairment and especially specific working procedures for working with visually impaired pupils in particular school subjects. It is also worth noting sub-chapters called *What can we expect from SPC?* and *How to prepare a visually impaired pupil for their future career*.

The penultimate chapter was written by two authors – Helena Kočová a Lenka Juříková. It is called *Specificities of educating children with physical disabilities both at pre-school age and at school-age*. This chapter is the most voluminous one of this publication. The authors depict the classification of physical disabilities, conditions of educating children with physical disability, specificities of assessment of special educational needs of children with muscular atrophy or dystrophy and specificities of educational process in children with physical disabilities.

The last chapter called *Pupil with Behavioural and Emotional Disturbance* was written by Marta Štrinclová. The theory is interpolated by case reports in order to

make the whole issue more comprehensible. Lastly, let me quote a generally applicable claim which is good to bear in mind: “... *if teachers want to take care of their pupils well, they must first of all take care of themselves and their own basic comfort...*” (p. 153).

All chapters contain both recommended literature and literature used and also profiles of individual authors. Most chapters contain examples based on real-life experiences and some chapters contain a glossary of terms. The publication should not be missing in bookcases of both beginning and experienced teachers. In most chapters pedagogues can find specific tips for working with children and useful references to further training. Some of the chapters focus only on the position of pupils in a classroom, which is also an important factor in educating children with SVP. The publication provides a comprehensive picture of the issue of inclusive education of pupils with SVP. Most chapters are well-elaborated and, first of all, they are very readable.

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Special Siblings

Havelka, D., Bartošová, K. (2019) Speciální sourozenci

Reviewed by Eva Švecová

David Havelka studied psychology and special education and works as a psychologist in clinical psychology at the Children's Department of the Psychiatric Hospital in Šternberk. Kateřina Bartošová studied psychology. She works in a private therapeutic practice and also as an assistant professor at the Institute of Psychology of the Faculty of Arts, Masaryk University.

The publication "Special Siblings" is intended primarily for parents of children with specific needs who have another child (or more) who is, compared to their sibling, a typically developing individual. The book is also addressed to professionals and educators (providing care to individuals with special needs). These experts can be a source of information for the parents of these children, their siblings, but also for their near and wider surroundings. It is a specialized theoretical and practical text providing the necessary information and advice on how to deal with siblings of individuals with disabilities and how to help them. The book continually shows passages with advice and ideas on how to work with children in given situations. There are also many examples from a real life or statements from parents or siblings without specific needs.

The book is divided into three main parts. The first one is devoted to the family of a child with disabilities, it is divided into two separate chapters. The first chapter is devoted to psychological functioning of parents. Parents are always exposed to stress, and families of children with disabilities have more stressors, where the greatest of stressors may be the manifestations of disability. These can also be associated with invariable health status. For example, education about disability in the extended and narrower family, but also among friends and at school, can be a relief from stress in the family. In this chapter, you can find references to the first two appendixes of the book – the first appendix is the mythbuster cheat sheet, where, at clear points, the assumptions that are still common but mistaken in society are refuted. The second

appendix is a simple drawing that shows where to look for help (experts or intervention programs). The functioning of the family as a whole is the title of Chapter Two. Since the presence of a child with disabilities affects family well-being, it affects the relationship as well as the functionality of the marriage. There may be a decrease in the number of activities spent together as a family. This can have a negative impact on the time spent with a healthy sibling and can be reflected in their emotions and consequently behavior. The family can resist these negative impacts by regular activities with a healthy individual, but above all by frequent and appropriately chosen form of communication.

The second part of the book deals with a sibling. This section again contains two separate chapters. The third chapter of the book discusses sibling in general. It describes what makes the sibling relationship specific and unique. In this chapter, the reader will find the first mention of the STEPS program (Group Therapy-Educational Program for Siblings of Children with Disabilities). STEPS is further described in Chapter Seven. The fourth chapter describes the sibling relationship with a disabled child. There are mentioned specifics of sibling relationship in particular types of disabilities (autism spectrum disorders, Down syndrome, mental disability, hyperkinetic disorder – ADHD and also oncological diseases). A healthy sibling is the subject of the second part of the fourth chapter. The authors describe the factors influencing the sibling relationship. These factors may be, for example, the age of children, the order of siblings, the sex of a healthy sibling and, last but not least, knowledge of the sibling's disabilities. Furthermore, the chapter summarizes the specific problems of healthy siblings. Healthy siblings may suffer from problems in emotional experience and behavior, may have difficulty adapting to the situation. The chapter also deals with four main areas related to problematic behavior of healthy siblings. These are confrontations with their sibling's problematic behavior and difficulties, lack of knowledge and understanding of their sibling's problems, changes in the family functioning and lack of sources of support and specific emotional demands. As throughout the book, there are passages where the authors offer tips and tricks that can be used to work with typically developing siblings.

The last part of the book outlines the possibilities of supporting healthy siblings. There are six chapters in this section. In the fifth chapter, the reader will find tables where, according to the answers to the questions, it is possible to orientately assess whether the healthy sibling has coped badly or on the contrary well with the sibling's disability. The recorded responses may be a signal to some parents to look for professional help. The sixth chapter deals with the prevention of mental problems in siblings of children with disabilities, in this case the authors express their opinions on the prevention of these problems. In case of a manifestation of problems (prevention did not work correctly or did not help), parents can contact professional help. The possibilities of individual support from experts are discussed in chapter seven.

Pediatricians, child psychiatrists, psychologists (pediatric clinical psychologist, school psychologist or counseling psychologist), special pedagogues and psychotherapists can help. Non-profit organizations, group programs for siblings of children with disabilities, as exemplified by the above-mentioned STEPS program, can also provide assistance to siblings of children with disabilities. The program consists of ten two-hour meetings a week. In the individual exercises, the children go through situational exercises, experiential training blocks, problem solving training, games, discussions, psychomotor exercises and dramatherapy. The main objectives of the program are to strengthen the sibling relationship, to transfer knowledge about disability, to improve the level of mental adaptation and quality of life, to practice ways of seeking and asking for support from loved ones, to solve problems and to train difficult situations typical for living with a disabled sibling. The authors of this publication are involved in this program. The support options also include the Internet (but in this case it is necessary to be cautious for the adequacy and validity of the information), work with the book and work with the film (these sections refer to Appendixes 3 and 4 for a list of books and films, where siblings of children with disabilities occur). The eighth chapter describes the possibilities of parental support. This chapter is again linked with tips and tricks that parents can use. Furthermore, the eighth chapter contains answers to questions in which parents trying to maintain the best possible relationship with their children are interested. The following chapter is mainly devoted to parents. It emphasizes the important idea that parents must not forget about themselves and their needs. Because the most important thing for children's satisfaction is that the parent is happy. The last, tenth chapter is devoted to the grandparents of children with disabilities, because they also participate in the functioning of the family and are its very important members.

This publication is written in a very readable way. It is intended for professionals but also for parents, therefore it is written comprehensibly for individuals who are not oriented in the issue of special education. It offers a wide range of advice that can be used and tried while raising children.

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What does this look like in the classroom?

Bridging the gap between research and practice

Hendrick, C., Macpherson, R. (2019). *Co funguje ve třídě?: most mezi výzkumem a praxí*. Translated by Pavla Le Roch. Prague: Universum (Euromedia Group).

Reviewed by Dagmar Sedláčková

It is obvious that the demand for providing higher quality education is constantly increasing, regardless the fact whether growing requirements are caused by general development and technical progress on one hand, or by social needs leading to changes that directly affect the system of education on the other, while this tendency does not take place only in the Czech Republic, but also in any other countries. To speak about Czech educational environment, teachers have been rather under pressure in recent decades and in addition the enactment of inclusive education in 2016 brought a need for extension and increase of their workload as well as competencies, therefore professional development plays even more important role in teacher's work nowadays. Teachers necessarily need to educate themselves for their development and improvement, to look for and to study new approaches and develop skills that enable them to achieve satisfactory results in their work. To accomplish their goal, teachers should not only transfer their expertise to learners, but also create a sufficiently stimulating and motivating environment, they should be able to work with any class effectively unless omission of providing individual approach, they are expected to evaluate learners' results appropriately and justly, by providing functional feedback, and at the same time, with all that has already been mentioned, they should be able to organize their work within their schedule in the way that enable them to find also time for rest and their private life. A helpful solution (though not for everything) can be getting acquainted with latest worldwide research results, as they can offer them an answer to a question: "How to do it?"

Due to a large amount of research in this area as well as due to a difficult accessibility of most of research materials to ordinary teachers and last but not least due to the the lack of foreign scientific publications translated into Czech language I became very interested in a book by Carl Hendrick and Robin Macpherson "*What does this look like in the classroom?:bridging the gap between research and practice*", as it can help

busy teachers easily discover important results of academic research and bring them directly to the classroom. What is more, the book is available in its Czech translation. One of the author's, a teacher Carl Hendric's, need to translate good theoretical ideas into practice probably gave the first impulse to write this publication, and its starting point for processing was based on a partnership with three strategic institutions in Britain (Institute of Education – University of Reading, Institute of Education in London and Wokingham Secondary Federation) and their professionals. The content of the book is based on a research, which started by gathering real teachers' questions. Consequently the questions were sorted and classified into ten fields, each of them representing one topic of each chapter, followed by the authors' cooperation with eighteen leading educators, who gradually answered the questions and transformed the most up-to-date research into classroom tools. The final product is a summary of very effective classroom practice in ten important areas of teaching. This handy book can become a practical teacher's manual in an inclusive class. Dr. David Mitchell, an adjunct professor at Canterbury University in New Zealand, dealt with similar problematics of translating academic research into excellent practice in the classroom, but with a special emphasize on inclusion, in his book "*What really works in Special and Inclusive Education*", published in 2014, where 27 teaching strategies based on EBT (Evidence based teaching) are described. Although the Hendrick's and Macpherson's publication does not primarily focus on education in inclusive settings, because only one chapter deals with special educational needs, the principles stated by these authors throughout the whole book are applicable in any class of any composition of learners and, unlike a number of many foreign stimulating scientific pedagogical publications, this book was translated into Czech language, by Pavla Le Roch in 2019, so it can come in handy also to teachers who cannot speak English. The book has 230 pages and it was illustrated by Oliver Caviglioli.

The book provides ten main chapters, each of them compiled with contribution of two specialists and each devoted to one area of teaching, including: assessment, marking and feedback (Dylan Wiliam & Daisy Christodoulou); behavior (Tom Bennett & Jill Berry); literacy and reading skills (Alex Quigley & Dianne Murphy); special educational needs (Jarlath O'Brien & Maggie Snowling); motivation (Nick Rose & Lucy Crehan); psychology and memory (Paul Kirschner & Yana Weinstein); classroom talk and asking questions in the class (Martin Robinson & Doug Lemov); learning myths (David Didau & Pedro de Bruyckere); technologies (Jose Picardo & Neelam Parmar) and self-learning, which is the last topic and the only chapter that was discussed by both authors and all eighteen specialists included in the research. Every chapter contains introduction to the topic that it deals with, and teachers' questions are consequently introduced to readers and answered or discussed by both specialists from their point of view as a possible evidence based solution. Nevertheless the book is divided into ten chapters devoted to specific topics, the topics and

themes overlap, because all activities involved in educational process are linked to each other, so the topic of assessment, for example, deals also with motivation etc. The summarizing eleventh chapter contains conclusion with six steps leading to effective education plus other steps recommended to teachers and headmasters.

To be more specific about practical ideas that a reader can find in the book, I can state some examples that the book deals with:

The problematics of formative evaluation and feedback, for example, is discussed in the first chapter that is devoted to marking and feedback. A lot of teachers are convinced that they provide feedback in the right way, but the specialists in the book criticize some teachers for not understanding the meaning of it, because it sometimes does not work in the way they do it, it does not lead to better learners' skills and what is more, the way, some teachers do it, often leads to increasing their workload. Therefore the book offers particular tools, how it could be done with less effort and better results. In the case of summative and formative evaluation, there is a nice idea of four-quartered evaluation, including 25% of detailed marking, 25% of self-evaluation of learners, 25% of peer-evaluation and 25% of learners' work together without evaluation, accompanied with a useful advice for effective feedback. The strategy reduces time that teachers spend on evaluating learners' work and enable them to spend more time on lesson plans, for example. The chapter focused on behavior deals for example with issues of punishment and support of creativity and currently often discussed problems with using mobile phones. A topic of learning or teaching methods of reading, expanding vocabulary, increasing reading motivation, errors or cross-curricular language use is discussed in a chapter that deals with literacy and reading skill. Chapter four focuses on special educational needs and the aim is to find the tools, how to motivate pupils and how to work with learners with learning disabilities, behavior and attention disorders, learners with social or emotional problems, foreigners, as well as talented learners. The question being discussed is the use of technologies, providing support measures etc.

During reading the book I, as a teacher, could clearly imagine reality in the classroom, some problems that I, as well as other teachers, face every day and I must say that it enriched me, because although I identify with some procedures in my own practice, the book offers me also new ideas that I can use immediately. Another thing that I appreciate is that not only the book concentrates on well-being of learners, but it also deals with reducing the amount of teacher's workload, the issues that are not often solved in pedagogical publications.

What I miss in the Czech translation of this book is a foreword that opens the original publication, because it clearly and briefly introduces the purpose, what the book is about and what a reader can expect, stating seven key questions for which the book should provide the answers. The questions are not omitted, but placed at the very end of the book in the Czech version. These questions should be asked by

teachers in their practice as well as by politicians, in the case they plan to enact some changes, as it can avoid serious mistakes. They are as follows:

1. *What is the need for change?*
2. *What are the potential benefits?*
3. *What is the evidence base for it?*
4. *What impact will it have on teacher workload?*
5. *What effect will it have on pupil learning?*
6. *Can a pilot be done before the initiative goes whole school?*

(David Laws 2017 in Hendric, Macpherson, 2017, p. 6)

In conclusion the book provides useful material for teachers at any school, it links useful scientific research findings with teachers' work. Teachers can find here inspiration not only on the level of theory, but also practical examples, and ideas from this book can lead to improvement of teachers' work and it can also reduce their workload.

References

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Information for authors



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Journal of Exceptional People (JEP) will provide research studies and articles on special education of exceptional people. This area covers individuals with disabilities and, on the other hand, gifted persons. The *Journal* will focus on publishing studies and articles in the field of education, social science (sociology) and psychology, special thematic issues and critical commentaries. The publishing language of the *Journal of Exceptional People* is to be English exclusively.

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