

Therapeutic benefit of sandplay and work with symbols in clients with disrupted communication ability

(scientific paper)

Jana Mironova Tabachová, Lucie Kytnarová, Kateřina Vitásková

Abstract: *The objective of the paper is to examine the use of sandplay therapy and work with symbols in treating clients with disrupted communication ability. A possible therapeutic benefit is shown on two case studies: 30-year-old woman after a car accident involving extensive craniocerebral trauma and consequential memory loss, treated by a speech-language therapist for anomic aphasia and acalculia. The second case involves a 47-year-old woman with mild anomic aphasia and dysarthria. At the beginning of therapy, both clients had difficulty identifying their own feelings, concerns and wishes. The benefit of sandplay and work with symbols lies primarily in the fact that clients with disrupted communication ability need not communicate their feelings, wishes and attitudes verbally, but choose a symbol that evokes these feelings. A very helpful aspect of the therapy is visualization, because they have a chance to see the image from a different perspective and try to find a solution.*

Keywords: *sandplay therapy, symbolic work, aphasia, dysarthria, speech-language therapy, communication disability, special education*

1 Introduction

Sandplay (or sandtray) therapy as a form of expressive therapy relates to art and play and originated in 1940 by combining Eastern and Western therapeutic techniques. It is based on the ancient traditions of Navajo sand drawing, creating sand mandalas in Tibet, building miniature sandbox gardens in Japan, etc. The Western tradition builds on the earlier work of M. Lowenfeld back in 1920s, who focused on supporting non-verbal thought and expression (Eberts & Homeyer, 2015). The term sandplay was first used by D. Kallf, who was a colleague of C. G. Jung. She applied Jung's analytical psychology and his perspective of the study of symbols (Kallf, 2003;

Steinhardt, 2007). The basic pillar of the therapeutic process is the development of a safe and protected environment for the client.

Sandplay therapy is uncontrolled and is based on free expression of an individual during a few sessions in a safe environment of the therapeutic sandpit, where problems might be recalled from the client's unconscious at a pace acceptable for the client. In contrast, the use of symbols is controlled by the therapist, who defines the theme and the form. Usually, one session focuses on a specific problem. The role of the therapist is to support the client in discussing the client's concerns and feelings. In a safe environment, the client can concentrate on internal imagination using sand, water and objects. Verbal and non-verbal techniques are combined through meaning. Artistic activity helps in coping with traumas during an early stage (Pearson & Wilson, 2001; Friedman, Mitchell, & 2008; Rubin, 2010). Sandplay techniques are mostly used in individual therapy, in the school environment, and as a secondary prevention in children exposed to violence, discrimination and war. It is also used to detect emotional problems in child refugees aged 4 to 8 years (Porat & Meltzer, 1998). Sandplay is an intervention method that helps individuals with tension, loneliness, differences in self-conception, and visualization of trauma and unprocessed memories. Problematic experiences are integrated through collective unconscious, which is transformed into internal experience and is manifested through external adaptation (Hwang, 2007; Yang, 2009; Loue, 2016).

In recent years, sandplay therapy has been used by numerous professionals working with persons with disrupted communication ability or related deviations. These are persons who do not speak or have minimum or severely disrupted verbal communication, whose difficulties might also be associated with their intellectual or mental disorders or autism spectrum disorder and other primary difficulties (e.g. Ben-Amitay, Lahav, & Toren, 2009 or Stagnitti & Pfeifer, 2017).

Language, non-language, verbal, non-verbal and cognitive communication deficits, which to various extent accompany acquired neurogenic disorders such as aphasia and dysarthria (or apraxia of speech) (Rampello et al., 2016), are often linked with for example acquired disorders such as alexia, agraphia or acalculia (Von Gunten & Wertheimer, 2000; Rosca, 2010) and mnemonic difficulties ([Sánchez-Cortés, Reyna-Cervantes, & Poblano, 2013; Fonseca, Ferreira, & Pavão Martins, 2017, e.g.). They even intensify the resulting difficulties and communication competence disruption of a person who requires at least interdisciplinary or transdisciplinary intervention, in which an important role is played by a speech-language therapist, often in cooperation with a neurologist, psychologist and other professionals in order to provide a comprehensive rehabilitation or therapeutic programme.

The two case reports below concerning persons with disrupted phatic functions use sandplay therapy as part of speech-language intervention aimed at persons with acquired phatic and cognitive disorders.

2 Material and methods

The objective of the research was to examine the use of sandplay therapy in adults with acquired neurogenic communication disorder. Two women were selected (speech-language therapy clients) aged 30 and 47 years, who are currently subject to speech-language intervention, the first woman due to anomic aphasia and acalculia; the second woman due to anomic aphasia and dysarthria.

The following two research questions were formulated:

1. What is the overall benefit of sandplay therapy for clients with disrupted communication ability and limited expressive communication skills in the context of speech-language therapy?
2. What changes in communication competence and overall participation of clients with disrupted communication ability will be observed in their communication behaviour?

The research objectives and research questions were based on an analysis of the current state of knowledge, available publications, comparison, and deduction. To produce case reports (based on case studies) the authors used the methods of direct participant observation, analysis of spontaneous activity products, diagnostic interview, explanation, diagnostic testing, description, induction, comparison, deduction, and synthesis.

The clients underwent three therapeutic sessions during which sandplay therapy was used. During the sessions photographs were taken, which illustrate the activity products analysed and are included in both case reports.

3 Results

3.1 Case report 1

The first case study involves a woman aged 30 years with completed secondary education with school leaving qualification. She was referred to the speech-language pathology office by a psychologist due to suspected disrupted communication ability of aphasia type. The client came accompanied by her mother, who provided support and was a source of information during the initial examination. At the end of December 2017 the client was involved in a car accident. In a collision of two vehicles she suffered an extensive craniocerebral trauma. From the scene of the accident she was transported by a helicopter to the university hospital and was operated on immediately. In the accident the client suffered damage to the right part of the frontal and temporal lobe, damage to the right eye including deformation of the orbit, and damage to the nerves on the right side of the face. The client was hospitalized for one and a half months, of which she spent 14 days in ICU. When she woke up she did not

know where she was, did not remember her name or other information concerning her life. She did not recognize her parents visually or by voice. Everything was strange and new to her. She also suffered damage to the short-term and long-term memory; the damage has remained up till now to some extent. In the hospital she started intensive rehabilitation followed by physiotherapy. The client was also referred to a psychologist. She took three sessions with the psychologist. She came to the speech-language pathology office in June 2018. During the initial examination she said that she did not remember anything before the accident, during the accident and almost nothing after the accident. Her memories are associated with strong emotional perception. The client's first memory is when she looked in the mirror for the first time after the accident.

During the examination, which included an interview, diagnostic tests and tasks, the diagnosis of anomic aphasia and dyscalculia was identified. A very helpful aspect during the therapy was the client's preserved writing ability. The client is unable to say a word verbally, but can always write it and read it. She can describe various pictures in writing, is able to add information in a text but mostly does not know what the information means. According to the client, the most serious problem is her memory, which limits her private and professional life. Following the initial examination and diagnosis, the client was offered sandplay therapy and work with symbols. The aim of the first session was to become familiar with the therapeutic sandpit in order for the client to focus on herself. Slowly and calmly the client familiarized herself with the sand and focused her attention on her body, particularly her hands. The second session focused on the topic My various parts, which was impossible to carry out. During the session the client focused on free work with the sand. The third session focused on the family and family relationships. In all three sessions the client worked with the topic of independence and dependence on other people. Pictures of the session are not provided because the client did not give her consent.

First session

As stated above, during the first session the client became familiar with the sandpit, sand and symbols. During sandpit therapy it was necessary to provide a very calm environment without disturbing elements (window closed, telephone disconnected, Do not disturb sign on the door, etc.) The client sat near the sandpit, closed her eyes, rested her hands on the edges of the sandpit, closed her eyes and took a deep breath for several times. The first contact with the sand was very shallow, gentle, only by the tips of the client's fingers in the central part closer to the lower edge of the sandpit. The client gently touched the sand, gradually extended her movement to the sides, but did not approach the edges. Her hand movements were centred around the lower edge of the sandpit throughout the whole period of the first session. She worked with the sand for about 20 minutes. Her hand movements resembled drawing a heart.

During fine movements in the sand the client started to see diverse and momentary images. The client wanted the images to stay for a longer period of time but as she poured the sand from her hands the images quickly disappeared. According to the client, she was disturbed in her concentration by the sound of the moving sand, but when she stopped the movement the image disappeared. The client became stressed by the quickly changing images and by being unable to maintain them. At the same time, the images did not resemble anything from her life. The thematic structures of all images that the client saw included the car, truck, road, coldness, sand, flickering of colours, etc. There is a certain link with the car accident, which the client does not remember but which changed her life considerably. The client interrupted work in the sand due to incipient headache resulting from the sound of the sand. At the end the client added that it had taken her considerable effort to withstand the sound of the sand for so long. The images that she created in the sand made no associations. There were three small islands on the sand connected by a path. Then the client chose some of the symbols. The selection was random, quick, without visual examination of the symbols. After selection the client suggested that she did not know why she had chosen the symbols. She put three symbols in the sandpit. In the lower right corner she placed a small van, on the middle island in the centre of the sandpit she placed a rock with a grassy surface, and in the lower left corner she placed a tom cat, who is according to the client self-confident and knows what he wants. The process of positioning of the symbols was very quick without deliberation. Again the client did not know why she had made such image. She did not see any association with her life. By means of guiding questions she concluded that the image was her journey through life after the car accident symbolized by the van. The rock and nature represented the need for calmness, which the client has failed to reach so far, and the tom cat symbolized what she wanted to be like. Reconciled with everything, self-confident again and independent. At the end of the session no integration process was applied. The client refused painting and photography. She did not want to remember the image or work with it again.

Second session

For the second session the client was well-tempered and determined to try out new tasks. The interval between the first and second session was three weeks. Upon arrival the client informed about a slight improvement of her memory, which had been noticed primarily by her mother. She can now remember things for a longer period of time and remembers some situations that happened and some of her activities. At home she goes through old photographs, but they do not bring up any recollections. She even does not recognize her parents in some of the older pictures. The client no longer feels anxious when looking at photographs, she is calmer and it is easier for her to breathe. She now more concentrates on everyday activities and herself. She

looks for new hobbies because she does not remember what she used to do in the past. The client started painting, cooking by recipes, watching TV. She does not look for old friends or other people; she is worried of being hurt. For the second session the therapist chose an activity called *My various parts*, which was eventually not carried out due to the client's sensitivity to various sounds. When any record was played, the client started suffering from headache after a short period of time and the activity had to be interrupted. The client suggested that she would prefer working with the sand and seeing more images. When she is in the sand, she feels that 'something has remained in her head and she is not empty'. She puts her hands in the sand with a great deal of determination and confidence. She uses whole palms, grasps the sand and releases it. She works across the whole surface of the sandpit, but mainly in the central area. She moves her hands down until she reaches the bottom of the sandpit and uses depth. By moving her hands she again makes a heart, which is always reshaped into an uncertain shape. After a while the client starts to work very firmly or even convulsively and tries to capture the image, but everything seems to disappear quickly. The whole body gets into tension and there are signs of anger and aggression. No image is displayed for a longer period than a few seconds. She gives up work in the sand after about 15 minutes and she is very disappointed and angry because she was unable to see anything this time. She came to the second session with great expectations and believed that she would be able to recall something from the past and finally improve her memory. Again, the images in the sand do not make any associations, she refuses to use the symbols and continue working with the sand. During the interview the client makes clear that she needs to become independent of her family. At the moment the client is dependent on her mother, father and sister. Not always do her family members provide help that she asks for or needs. Despite improved expression, memory and other areas, she has very negative feelings and concerns about further improvement. After the interview she again approaches the sandpit and plays with the sand in a dynamic way. After a while her movement become calm and her body relaxes. As an integration process the client herself selected work in the sand. She refused painting, photography and other activities available.

Third session

So far the last sandplay session with the client focused on the topics *My family* and *My life*. The topics were selected deliberately based on the course of the second session. The client has very negative perceptions concerning her current family situation and at the same time wishes to become independent of the family at least partially. This is however not completely possible as a result of her health condition. The client drew a circle on a piece of paper and was supposed to draw a dot to represent her. She placed herself to the right side of the circle in the middle. Above the circle she wrote the name of the activity: *My family*. Then she was asked to close her eyes, relax and

take a deep breath. In her thoughts she was supposed to move into her home environment, imagine her family and individual family members. After imagination the client chose a figure from the symbols available that should represent her. After she selected a substitute figure, she started picking figures to represent individual family members. The figures were selected more carefully compared with the first session; the client thought carefully what her family members should be represented by. For herself she chose the tom cat from the first session. For her mother she picked a gentle doll with a baroque dress and an umbrella, her father was represented by a boy with a casual posture. The figure to represent her sister was selected very quickly; it was a monkey with a baby. She noticed the baby monkey only when she worked with the circle and was very surprised. She identified the baby monkey as her small niece. The client returned to the circle she had drawn and now her task was to position the figures on the picture in the way she perceives the relationships in her family. To position the figures she drew lines symbolizing the relationships between family members. Then the client described why she had positioned the figures in this way and how she had drawn the lines. She did not want to change anything about the picture; in her opinion the positions were ideal. During the interview it was revealed that she had used her idea of the family rather than the current family situation. When looking at the image the client made sure that she needed more space and time for herself, become independent of the family and prove to her family members that she is ready to return to her life without dependence on other people. At the end of the session, drawing with pastels was used as an integration process. Using colours, the client visualized her feelings concerning the family.

3.2 Case report 2

The second case study included a woman aged 47 years who works as a business manager. Currently she looks after her mother who suffers from Alzheimer's dementia. In December 2013 she sustained haemorrhagic cerebrovascular attack. She was referred to a speech-language pathologist with suspected aphasia. During the initial contact no symptoms of aphasia were observed, but in stressful situations significant symptoms of mild anomic aphasia and dysarthria were manifested. Subjectively, the client feels tingling and paralysis on the right side of the face and in the right upper extremity. She has fits of panic and is concerned about another cerebral attack. The client took her mother to the first session because she wanted to improve her cognitive functions and also wanted to work on herself. The first session was oriented primarily on the client's mother. Therefore, she was advised to come to the second session alone. The aim of the second session was to reduce stress and fear leading to dysarthric speech manifestations. Tension was visible in the muscles of the face, neck and hands. The main problem is Mary's mother, who needs to be taken care of 24 hours a day. She does not yet consider placing

her mother in a home for people with Alzheimer's disease. She is exhausted both physically and mentally. It bothers her that she has no time for herself; she has no hobbies or a boyfriend. That's why I decided to use sandplay. The client was excited about sandplay. She has a very positive attitude to sand, because she played volleyball professionally and has good memories.

First session

The first sandplay session took an hour – the task for the client was not to think about anything. During the first 30 minutes the client took sand in her hands and released it slowly. She breathed deeply and audibly. In her face, tension and relaxation alternated. When she was in tension, she pressed sand in her hands (at the end of the session she explained that in the course of sandplay she had various thoughts which quickly disappeared). She picked the symbols quickly without thinking. The first symbol was the pig, sheep and monkey (she likes the way they laugh). Further symbols included the dog (she likes dogs), two shells (nature), bird on a pyramid (represents freedom according to the client), camel (holidays, sand, relaxation, lightness), bell (Christmas), horse (friend from university), and cow (university).

She divided the sandpit into three parts (client's description):

- University – horse, cow and donkey (happy memories of her study, years in university, experiences with friends)
- Childhood – pig, sheep, monkey, dog
- Son, experiences – camel, bird on a pyramid, shell, bell (she was in Egypt with her son; the bell reminds her of Christmas when her son was little; shells represent the sea, memories of her holidays, oasis of peace, relaxation zone, no stress).

She added the horse later when she was asked if the image was completed and if there was something she would like to add. The horse is symbol of a friend, who taught her to ride a horse. Before that, she had been afraid of horses. According to the client, she created what she liked. The image gives her energy, she wants to focus on herself, and have some enjoyable experiences. She was surprised by the image that she had created. Apparently, she has forgotten what she liked. She looked at the image in disbelief and smiled. She would appreciate not having to follow rules so much and experience some beautiful moments. 'I reassured myself about what I had wanted for a long time, to live again.' The client left in a good temper. The integration process was photography and drawing (she used a yellow and orange crayon and drew the sun).



Figure 1: *Merry memories*

Second session

The client came and explained that she had applied for her mother to be placed in a home for persons with Alzheimer's disease. She was sad but on the other hand was no longer able to take care of her mother, she was exhausted. After the first sandplay therapy her days were happy. She also started sorting things at home (toys after her son, clothes from when she was young, etc.) She had postponed this for a long time and now was happy about herself. The client decided to put her life in order. At home the client still applies elements of voice movement therapy, now for integration purposes automatic writing was added. She needs to tear up what she writes because she has a tendency to accumulate everything.

The second sandplay session focused on the family. The client's task was to think about her family. Playing with the sand was short, she breathed deeply when she manipulated with the sand, and her whole body was in tension. She chose the symbols carefully and slowly. The symbols she selected included the following: beads, two hearts, rocking horse (according to the client this represents life on a roller coaster), praying woman, angel (this symbol was chosen additionally). In a circle made of beads were the two hearts and the praying woman. The rocking horse was outside

the circle. She was not happy about the image. The client placed the praying woman outside the circle (the woman represents her and she feels to be outside the circle because she placed her mother in a home for persons with Alzheimer's disease). The only symbols remaining in the circle were the hearts (which represent the family according to the client). When she was asked if she wanted to change something she responded with hesitation, but then she brought the angel and placed it inside the circle (according to the client she wants this to happen. This symbolizes her mother's death). She was still not happy with the image; she completely removed the praying woman from the sandpit. After that she took the symbol of the laughing donkey and placed it in the middle of the circle. She would like things to be this way. Now she was happy, the image is clear, her life is cleared up and has only good memories of her mother.

At first the client created an image of the current family, but was not happy; it did not reflect how she would like to live. A very important step that took place in the sandpit was bringing the angel as a symbol of her mother and reconciliation with the fact that her mother will die. For the client this brought relief. According to the therapist, this combines three themes: sadness caused by placing her mother in the home for the sick, uncertainty concerning the rightness of the decision, and on the other hand, concerns about being happy about placing her mother in the home. Photography was used as an integration process.



Figure 2: *My family as it is now*

Third session

The client's mother has been in a home for persons with Alzheimer's disease for a week. The client's clothing had new colours and the client felt very well. She said she had started a new life. She has found a new boyfriend, they go for long walks, and she visits her mother regularly. She does not want to speak about her mother any more. She would like to take a retraining course to become a masseur and start working again. The task for the client during the third session was again not to think about anything. She played with the sand for a long time; again she breathed deeply and poured the sand from one hand to the other. When the client finished shaping the sand she said that the image was finished. She did not want to select any symbols; she only wanted an empty sandpit as a symbol of a new start, a blank sheet of paper. By doing this the client completed the therapy in our establishment. According to her, the new start also means not seeing any doctors.

Discussion

The authors present two case studies of women with anomic aphasia, where speech-language therapy was combined with sandplay therapy and work with symbols. As far as the responses to the above mentioned research questions are concerned, each woman found herself in a different situation and had different difficulties, but they had one thing in common. Both focused on people around and on their families instead of themselves. By using the sand and the symbols, both women realized that they had to focus more on themselves, on their needs, hobbies, wishes, and learn to be a little selfish to their surroundings. The first woman stopped worrying about the past, which she does not remember, and concerns about the future. She now concentrates on the presence and near future. Her aim is to become independent of her parents, go to work again, and search for new friends. She is more motivated for speech-language therapy, improvement of vocabulary and recollection, and strengthening of short-term and long-term memory. The second woman has focused on herself, found a new boyfriend and started to change her whole life. The change also includes termination of speech-language therapy and focussing on personal and professional life.

4 Conclusion

According to the authors, the main contribution of sandplay therapy and work with symbols is that clients who have difficulty with verbal communication can express their feelings, wishes and opinions by means of a symbol. They can visualize an image that they have in mind and explain to others how they feel but at the same time

look at things from a different perspective. This often results in releasing the clients' tension, which usually prevents verbal communication. The mental condition of the clients improves, which is crucial to therapeutic effect. As a result of these changes, the communication competence in persons with disrupted communication ability improves. In this respect, the authors agree for example with a research study aimed at the use of sandplay therapy in children and adolescents with traumatic brain injury (TBI) by Plotts, Lasser, Prater (2008), who in spite of their limitations caused by a small research sample and subjective variables on the part of the research cases confirmed the importance of sandplay therapy as a technique of individual expression supporting communication and overcoming limited social skills, executive function disorders and impulsiveness in this group of persons.

Acknowledgements

The research results constitute partial results of the specific research "Research on selected parameters of communication, language and orofacial processes from a speech and language therapy perspective", IGA_PdF_2018_024, principal researcher: Assoc. Prof. Kateřina Vitásková.

References

The list References to resources ought to follow these norms and directives: ČSN ISO 690 and ČSN ISO 690-2 or Publication Manual of the American Psychological Association (APA).

- [1] Ben-Amitay, G., Lahav, R., & Toren, P. (2009). Psychiatric Assessment of Children with Poor Verbal Capacities Using a Sandplay Technique. *Primary Psychiatry*, 16(12), 38–44.
- [2] Eberts, S., & Homeyer, L. (2015). Processing sand trays from two theoretical perspectives: Gestalt and Adlerian. *International Journal of Play Therapy*, 24(3), 134–150. doi:10.1037/a0039392
- [3] Fonseca, J., Ferreira, J. J., & Pavão Martins, I. (2017). Cognitive performance in aphasia due to stroke: a systematic review. *International Journal on Disability & Human Development*, 16(2), 127. doi:10.1515/ijdh-2016-0011
- [4] Friedman, H. S., & Mitchell, R. R. (2008). *Supervision of sandplay therapy*. London: Routledge.
- [5] Hwang, Y. S. (2007). Applications of sandplay therapy in a case of a middle aged woman of depressive tendency. *Korean Journal of Play Therapy*, 10(4), 81–95.
- [6] Jang, M. (2009). *Child counselling*. Seoul: Tae-Young Publishing Company.
- [7] Kallf, D. (2003). *Sandplay: A psychotherapeutic approach to the psyche*. USA: Temenos Press. Original work published in 1980.
- [8] Lechta, V. (2003). *Diagnostika narušené komunikační schopnosti*. Praha: Portál.
- [9] Loue, S. (2016). Expressive Therapies: Music, Art, and Sandplay. *Encyclopedia of Mental Health*, 196–203. doi:10.1016/B978-0-12-397045-9.00185-3
- [10] Pearson, M., & Wilson, H. (2001). *Sandplay and symbol work*. Melbourne: Shannon Books.
- [11] Plotts, C., Lasser, J., & Prater, S. (2008). Exploring sandplay therapy: Application to individuals with traumatic brain injury. *International Journal of Play Therapy*, 17(2), 138–153. doi:10.1037/1555-6824.17.2.138

- [12] Porat, R., & Meltzer, B. (1998). Images of war and images of peace. *Journal of Sandplay Therapy*, 7(2), 25–71.
- [13] Rampello, L., Rampello, L., Patti, F., & Zappia, M. (2016). Review Article: When the word doesn't come out: A synthetic overview of dysarthria. *Journal of the Neurological Sciences*, (369), 354–360. doi:10.1016/j.jns.2016.08.048
- [14] Rosca, E. C. (2010). Acalculia in a patient with severe language disturbances: How do we test it?. *Cognitive Processing*, 11(4), 371–374. doi:10.1007/s10339-010-0359-7
- [15] Rubin, J. A. (2010). *Introduction to art therapy: Sources and resources*. New York: Routledge.
- [16] Sánchez-Cortés, N. A., Reyna-Cervantes, K. P., & Poblano, A. (2013). Intervención neuropsicológica en la consolidación de la memoria en pacientes con afasia acústico-amnésica: Estudio exploratorio y preliminar / Neuropsychological intervention in memory consolidation in patients with acoustic-mnemonic aphasia: An exploratory and preliminary study. *Investigación Clínica*, 54(4), 360–372.
- [17] Stagnitti, K., & Pfeifer, L. I. (2017). Methodological considerations for a directive play therapy approach for children with autism and related disorders. *International Journal of Play Therapy*, 26(3), 160–171. doi:10.1037/pla0000049.
- [18] Steinhart, L. (2007). Group sandplay and visual reality. *Journal of Sandplay Therapy*, 16(2), 13–17.
- [19] Von Gunten, A., & Wertheimer, J. (2000). A synoptic review of the concepts on acquired acalculia. *Schweizer Archiv für Neurologie und Psychiatrie*, 151(5), 208–217.

(reviewed twice)

Mgr. et Bc. Jana Tabachová
 Palacký University in Olomouc
 Žižkovo nám. 5
 77140, Olomouc
 Czech Republic
 jana.tabachova@upol.cz

Mgr. Lucie Kytnarová
 Palacký University in Olomouc
 Žižkovo nám. 5
 77140, Olomouc
 Czech Republic
 lucie.kytnarova@upol.cz

doc. Mgr. Kateřina Vitásková, Ph.D.
 Palacký University in Olomouc
 Žižkovo nám. 5
 77140, Olomouc
 Czech Republic
 katerina.vitaskova@upol.cz