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COGNITIVE PROCESSES IN PERSONS WITH INTELLECTUAL DISABILITY AS A FACTOR OF THEIR PARTICIPATION IN PSYCHOTHERAPY[1]

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SUMMARY

This paper reviews research on cognitive processes in persons with intellectual disability (ID) as a prerequisite of the effective application of cognitive-behavioral therapy in treating mental disorders in these persons. This domain of investigation is important for the following reasons: persons with ID, according to the results of some studies, are at greater risk of developing mental disorders, in comparison to persons from the general population; the efficacy of cognitive-behavioral therapy in treating mental disorders in persons without ID has been empirically supported; there is some evidence that this psychotherapy may be effective in persons with ID. Cognitive behavioral therapy aims to treat emotional problems by using various techniques which lead to changes in false cognitions and, as a consequence, to changes in dysfunctional emotions and behavior. In this work we present empirical findings on the following cognitive processes and abilities in persons with ID: verbal abilities; self-concept; metacognition; recognition and labeling of emotions; linking events and emotions; discriminating thoughts, feelings and behavior; understanding the mediating role of cognition in the relationship between situations and emotional and behavioral responses. Research suggests that persons with mild and moderate ID are capable to discriminate and label various emotions, and to link events and emotions, but that they have significant difficulties in understanding the mediating role of cognitions in emotional problems. Further, persons with ID have constraints in verbal abilities and in metacognition which impose difficulties on their participation in psychotherapy. However, several authors express the opinion that it is possible to work on the development of cognitive abilities which are required for the application of the cognitive-behavioral approach, and that this work may be a part of psychotherapy.

Key words: cognitive processes, cognitive functioning, cognitive abilities, intellectual disability, cognitive-behavioral psychotherapy

INTRODUCTION

Persons with intellectual disability (ID) are at greater risk of mental disorders, than persons from the general population, according to the results of some studies (Kerker, Owens, Zigler, Horwitz, 2004). This may be partly explained by their greater exposure to life events and circumstances which are the source of stress, such as unemployment,

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poverty, lack of close friendships, intimate relationships and social support networks, poor family relations, and traumatic abuse experiences (Taylor, Lindsay & Wilner, 2008).

Data on the prevalence of mental disorders among persons with ID are inconsistent. Hatton (2002) discusses factors which contribute to difficulties in obtaining valid and reliable assessment of mental disorders in the population of persons with ID. First, the applicability of standard psychiatric classification systems (Diagnostic and Statistical Manual of the American Psychiatric Association and International Classification of Diseases of World Health Organization) in persons with ID has not been empirically tested. In addition, there are methodological difficulties in obtaining data on mental health problems of these persons. The diagnoses of mental disorders are to a great extent based on descriptions of mental states and the inability of persons to report on these states poses problems. According to Hatton (2002), research evidence suggests that most people with mild and moderate ID may give accurate descriptions of their mental states as long as interview questions are appropriately adapted and possible response biases are taken into account. For example, Costello et al., (Costello, Moss, Prosser & Hatton, 1997) show that persons with ID are capable to describe their emotional states, when the questions are clearly and appropriately expressed and when possible respondent's acquiesce is taken into account. However, empirical data on validity and reliability of assessment of mental health in persons with severe and profound ID are very scarce.

Until recently, mental health problems of persons with ID have not received attention (e. g., Whitehouse, Tudway, Look & Stenfert Kroese, 2006), and this may be partly explained by their institualization (Arthur, 2003). Emotional and behavioral problems which may be present in these persons have generally been attributed to their difficulties in intellectual functioning and in this way the possibility that these problems are symptoms of mental disorders was often neglected. When the social system of protection of persons with ID in United States of America and in Western Europe changed, and when they were moved from institutions and included in families and in broader society, their emotional functioning and mental health have received professional and scientific attention. The recognition that persons with ID may have mental difficulties was followed by the introduction of the term „dual diagnosis" to designate that state (Išpanović-Radojković, 1989) and by the more intensive research on mental health problems in persons with ID.

The role of cognitive processes in genesis and treatment of mental disorders: Cognitive-behavioral approach

Cognitive-behavioral therapies have developed through a combination of the behavioral approach to the problems of psychological development and the cognitive approach which was pioneered by Aaron Beck (Beck, 1967, 1976; Beck, Emery & Greenberg, 1985) and Albert Ellis (Ellis, 1962, 2001; Ellis & Dryden, 1997). Cognitive-behavioral approach has a prominent place among contemporary models of mental disorders and their treatment. Cognitive-behavioral therapies are among the most intensively empirically tested psychotherapies (Butler, Chapman, Forman & Beck,

2006) and they are considered to be among empirically proved therapies for various mental disorders and other mental health problems (DeRubeis, Webb, Tang & Beck, 2010). We will now present the basic principles and characteristics of the cognitive-behavioral psychotherapeutic approach.

According to the rational-emotive-behavioral theory formulated by Ellis (Ellis, 1962, 2001; Ellis & Dryden, 1997) and Beck's cognitive theory (Beck, 1967, 1976; Beck, Emery & Greenberg, 1985), which was the first among cognitive-behavioral approaches, cognitive processes play a central role in the genesis of emotional problems and mental disorders. Although Ellis preceded Beck in stressing the importance of cognition in emotional functioning, Beck's cognitive theory is much more influential, and Beck's approach to understanding and treating mental disorders is in a greater extent empirically tested. For that reason, we will present the basic principles of Beck's cognitive approach. First, we will consider the genesis of mental health problems according to Beck's approach. This will be followed by the description of basic principles of the treatment of emotional problems according to this approach.

The origins of Beck's cognitive theory may be found in the philosophy of Kant (Dozois & Beck, 2011). According to Kant's epistemology, the mind actively categorizes and organizes information in order to construct the representations of the outer world. Kant also introduced the concept of „schema", which has, as we will show, an important role in Beck's cognitive theory. Schema refers to cognitive templates which determine the way in which we interpret the reality.

According to Beck (Beck, 1967, 1976), the way of thinking (cognitive appraisal of stimuli) determines which emotional states and behaviors will result. So, the central premise of the approach is that it is not the situation which the person faces that determines his/her emotions and behavior, but the thinking or the appraisal of that situation. According to Beck's model, the three levels of cognition may be differentiated: 1) schemata; 2) information processing and mid-level beliefs, which include, for example, dysfunctional rules, assumptions, and attitudes; and 3) automatic thoughts (Dozois & Beck, 2011). Schema may be defined as an organized cognitive structure which is based on the stored information or memories and schema is a basis for the core beliefs concerning an individual's own personality (ibid.).

Schemata regulate the processing of stimuli, i.e. the processes of registering, coding, categorizing and appraising of stimuli and the processes of retrieval of information stored in memory (Kovacs & Beck, 1978). In general, schemata play a role in adaptation by enabling persons to process information in an economic way. However, when schemata become negatively biased and rigid, this presents a problem. According to Beck, maladaptive schemata about own personality originate in early childhood, and they may be reinforced during later life. The concept of schema includes core beliefs and assumptions stored in memory, as well as the way in which these core beliefs are organized. Core beliefs, which are organized within the person's self-system and often are not well articulated, may be unconditional, absolutistic (e. g. „I don't deserve to be loved.", „I am incapable.", „I am unworthy."), conditional (e. g. „If I make a mistake, I will not be respected anymore."), or may represent rules of behavior (e. g. „I must always do things perfectly.") (James, Reichelt, Freeston & Barton, 2007).

Core beliefs influence the development of the second level of thinking which consists of biases in information processing and mid-level beliefs. This influence is expressed through biases in attention, memory, or interpretation of situations. Biased thinking may be present in false interpretation and causal attribution. For example, a person may think that making a mistake equals being totally unsuccessful, or that her personal value depends on acceptance or approval by other persons.

Activation of schemata or biases in information processing, in specific situations, leads to the activation of automatic thoughts. Automatic thoughts are positive or negative thoughts which emerge on the surface of the cognition, so that they are easily brought to the consciousness. They refer to the self, to the surrounding and to the future. Although automatic thoughts are in a greater extent on the surface, and more clearly related to the external events, they are functionally related with deeper schemata and they are activated as the result of the activation of deep core beliefs. Some examples of negative automatic thoughts are „They will find me boring." „This state is unbearable for me.". Examples of positive automatic thoughts are „I will succeed in what I do.", „I am as relaxed as I should be". A person who has, for example, a core belief „I never do anything well", will tend to negatively appraise her accomplishments and she will have automatic thoughts such as „I haven't done this well". This example demonstrates the relationship between automatic thoughts and core beliefs.

According to our opinion, in some research instruments, there is no adequate distinction between automatic thoughts and core beliefs. In the widely used questionnaire for the assessment of automatic thoughts (Automatic Thoughts Questionnaire, Hollon & Kendall, 1980), some of the items express general attitudes, similar to the following „I am unworthy", or „My life is unworthy" which refer to core beliefs rather than to automatic thoughts. This is important when we consider application of cognitive-behavioral approach in problems of persons with ID because they have difficulties in understanding abstract concepts contained in core beliefs, but can grasp the content of automatic thoughts.

The aim of the cognitive therapy is to replace irrational and maladaptive cognitions by cognitions which are realistic, i.e. consistent with reality, and adaptive. The psychotherapeutic work is first focused on cognitions which are easily available to the consciousness, i. e. automatic thoughts, and then deeper cognitions, i- e- core beliefs are targeted. The three main principles of cognitive therapy are the following: a) cognition influences emotions and behavior; b) cognitive activity may be monitored, regulated and changed; and c) by changing the beliefs, a person may achieve the desirable changes in behavior and emotional experiences (Dobson & Dozois, 2010). In cognitive therapy persons are encouraged to treat their own automatic thoughts and core beliefs as hypotheses about reality, to question and test them, and, if it turns out that they are inconsistent with reality, to replace them with realistic thinking.

Besides Beck's cognitive therapy, there are other psychotherapies which belong to the family of cognitive-behavioral therapies. Features that are common to these approaches are: focus primarily on the present rather than the past, emphasis on parsimony in theoretical explanations, use of learning principles (including principles of how a person interprets the world and relates to own experience; and epistemological empiricism (Herbert & Forman, 2011).

Persons with intellectual disability and characteristics of their cognitive functioning that are relevant for their participation in cognitive-behavioral therapy

Schalock (2011) makes a distinction between operational and constitutive definitions of intellectual disability. The most widely used operational definition of the concept, according to this author, is the definition endorsed by the American Association of Intellectual and Developmental Disabilities which states: „Intellectual disability is characterized by significant limitations both in intellectual functioning and in adaptive behavior as expresses in conceptual, social and practical adaptive skills. This disability originates before age 18" (Schalock et al., 2010: 1). Schalock (2011) finds that, unlike operational definition of ID which has not changed significantly during the last several decades, constitutive definition which defines the concept of ID in relation to other concepts and contributes to the theoretical understanding of the concept, is subject to changes. The author further points that the previously used construct of mental retardation referred to a state internal to the person, whereas intellectual disability is conceived as a fit between the person's capacities and the context within which the person is to function. Schalock (2011) summarizes that the constitutive definition of ID defines this disability in terms of limitations in human functioning, that it emphasises an understanding of disability from ecological and multidimensional perspective, and recognizes that individualized supports play an important role in improving functioning of persons with ID.

An important question is whether persons with ID are capable, and in which ways they are capable, to participate in cognitive-behavioral therapy, given their limitations in intellectual functioning. In order to come closer to the answer to this question, we will first focus on the abilities that are generally considered to be the prerequisites for the effective participation in this therapy.

According to some authors, (e. g. Stenfert-Kroese, 1998) the cognitive abilities needed for cognitive-behavioral psychotherapy are the ability to give self-reports and the ability to use abstract concepts. According to Hatton (2002) important are the communication skills, and cognitive abilities such as self-monitoring and memory, the ability to recognize emotions and to understand the cognitive model of emotional disorder and therapeutic change. Wilner (2006) also states that, besides the motivation to think about thoughts and emotions, which is a prerequisite for all psychotherapies, participation in cognitive-behavioral therapy requires the understanding of the central, mediating role of cognitions in the development and treatment of emotional disorders

In the following, we present the empirical findings of the research on cognitive abilities in persons with ID which are important for their engagement in cognitive-behavioral psychotherapy. First, we present the findings of studies which have not directly investigated the capabilities of these persons to participate in psychotherapy, but which provide important information regarding that capability. This is followed by the presentation of research studies which directly focused on the assessment of the readiness of persons with ID to participate in cognitive-behavioral psychotherapy.

Verbal abilities

There are significant differences in verbal abilities among persons with ID, depending on the level of disability. There are also great individual variations in verbal abilities within the categories of ID. For example, Kaljača (2008) indicates that the quality of speech and language varies among persons with moderate ID, from the level of understanding verbal speech and non-verbal communication, to the level of the well developed speech production. Among persons with severe ID the speech is poorly developed, consisting of small number of words that a person understands and use, whereas children with profound ID never learn to speak (Loga, 1989). It may be concluded that persons with severe and profound ID do not develop, or do not develop at an adequate level, the thinking mediated through speech. Thus, we may assume that they do not construct schemata, automatic thoughts and core beliefs which are the basic elements of cognition responsible for the development of emotional disorders according to cognitive-behavioral approach. It follows that this psychotherapeutic approach is not applicable in these persons.

Self-concept, self-esteem, and self-efficacy

Self-concept refers to the totality of thinking about the self, about own ego, whereas self-esteem refers to the attitude towards oneself which includes evaluation (Trebješanin, 2000). Self-concept and self-esteem may be important in the development of mental disorders. For example, according to Beck's theory of depression, negative view of oneself is one of the components of the negative cognitive triad (which also includes negative view of the world and of the future) which is the basis of depressive disorder (Beck, 1967). Also, the person's evaluation of her/his own ability to cope with problems may determine motivation of the person to participate in psychotherapy.

Research shows that persons with ID, and especially persons with mild and moderate levels of disability, are capable to construct self-concept and self-esteem (e. g. Jones, 2012). Social comparison process is important for the formation of self-concept. According to social comparison theory (Festinger, 1954), persons tend to evaluate their own selves, and if that can not be achieved based on objective measures, they evaluate themselves based on the comparison with other persons. Persons with ID use social comparison processes to create self-concept and self-esteem. Research shows that negative social comparison (i. e. evaluating oneself negatively in comparison to others) is related to lower self-esteem in persons with ID (Dagnan & Sandhu, 1999; Paterson, McKenzie & Lindsay, 2012).

Self-efficacy refers to an individual's belief in his or her capacity to successfully cope with certain situations (Bandura, 1997). Persons with ID have lower self-efficacy compared to persons without ID. Wilner (2006) refers to a study which found that persons with ID underestimate their achievement on verbal tasks to a greater extent than persons without ID, whereas these two groups did not differ in terms of self-efficacy on non-verbal tasks. However, self-efficacy of persons with ID in relation to the emotional self-control and capability to solve their own problems through psychotherapy has not yet been investigated (Willner, 2006).

Metacognitive abilities

Metacognition refers to knowledge and beliefs about thinking and to strategies which are used to regulate and control one's own thinking (Moses & Baird, 1999). According to Beck's cognitive approach, during psychotherapy a person strives to become aware of own negative thoughts, to test their validity and to change disfunctional cognitions which are at the core of emotional problems. Therefore, the ability to monitor and regulate, i. e. metacognitive ability is crucial for the attainment of desirable outcomes in psychotherapy.

Research shows that metacognition and metacognitive strategies are less developed in adolescents with ID compared to their typically developing peers (Moreno & Saldana, 2005, Nader-Grosbois, 2014). Metacognition is positively correlated with verbal comprehension and self-regulation both in persons with ID and in persons without ID (Nader-Grosbois, 2014). Importantly, metacognition may be promoted in persons with ID. For example, Moreno and Saldana (2005) showed that training of specific cognitive abilities using computer tasks leads to improvements in metacognition in adolescents and adults with ID. Therefore, it may be assumed that during psychotherapy persons with ID may develop their metacognition by learning to pay attention to their own cognitions and to test and change them, with the help of psychotherapist. We may assume that persons with mild ID and to a lesser extent persons with moderate ID are capable of metacognitive functioning. Persons with severe and profound ID, due to lack of speech or very low verbal abilities, probably do not develop the ability to think about one's own thinking, i. e. metacognition. However, Moreno and Saldana (2005) showed that even in persons with severe ID (average IQ according to Raven's Progressive Matrices was 36, 23) improvements in metacognition may be achieved.

In the following we present the studies which direcly aimed to investigate the readiness of persons with ID for cognitive-behavioral therapy. These studies investigated the following abilities which are presumably important for the participation in this form of psychotherapy: recognition and labeling of emotions; linking events and emotions; discriminating thoughts, feelings and behavior; and understanding the mediating role of cognitions in the relationship between situations and emotions and behavior.

Recognition and labeling of emotions

According to Dagnan et al., (Dagnan, Chadwick & Proudlove, 2000) the ability to recognize and differentiate emotions is the basic prerequisite for participation in psychotherapy. The authors studied the ability of persons with ID to recognize emotions of happiness, sadness, fear, anxiety and anger, based on pictures of facial expressions. Participants were asked to indicate the face that represents a stated emotion. On average, persons successfully recognized 2,7 facial expressions. The same method was used in a study by Sams et al., (Sams, Collins & Reynolds, 2006) and the majority of participants with ID successfully recognized all five emotions and the average score was 3,36. Recognition of emotions was not correlated with verbal, non-verbal, or general intellectual quotient measured by Wechsler's scale, whereas it was positively related to receptive vocabulary in this sample.

Joyce et al., (Joyce, Globe & Moody, 2006) investigated the recognition and labelling of 12 emotions in persons with ID: happy, disgusted, surprised, sad, angry, thinking, bored, interested, afraid, sneaky, excited and hurt (we may notice that some of these states are usually not regarded as emotions). As in the research by Dagnan et al., (ibid.) the participants were asked to indicate the face which expresses certain emotion, for example to point to the angry face, and to label amotions by answering the question "What is this person feeling?". The mean score for identifying emotions by pointing to the face which expresses that emotion was 4, 4. The average number of emotions which persons were able to name by answering to the question what is the person feeling was 2,7. The emotions that were the most often identified or labelled were happiness, sadness, and fear.

Lindsay et al., (1994) report that persons with mild and moderate ID give reliable self-reports on emotional states of anxiety and depression on self-report scales. This finding is not in accordance with the findings of the previously mentioned experimental studies which demonstrate low levels of emotional recognition and labelling among persons with ID. This inconsistency suggests that persons with ID may be better able to recognize own emotional states than to recognize and label emotional states based on pictorial presentations. The latter may be a more complex cognitive task for them. Further research is needed to investigate this assumption. Joyce et al., (Joyce, Globe & Moody, 2006) suggest that it may be necessary for persons with ID to be taught to recognize emotions during psychotherapy, given the importance of this ability for the psychotherapeutic work.

Linking events and emotions

Reed and Clements (1989) found that language ability was related to emotional awareness in persons with ID. Emotional awareness was operationalized as consisting of the following: differentiating happy and sad faces on pictures and in reality; identifying an emotion following an event presented pictorially and verbally; and identifying how the participant would feel if a specific event occurred. The authors found that ability to recognize emotions was related to language ability, with a language level which corresponds to age of 4 years and 5 months being necessary to be successful in emotion recognition.

Joyce et al., (Joyce, Globe & Moody, 2006) and Dagnan et al., (Dagnan, Chadwick & Proudlove, 2000) used the test by Reed and Clements of emotional awareness (Reed & Clements, ibid.). Joyce et al., (ibid.) found that half of the persons with ID from the sample met the criteria of emotional awareness on the test. The most difficult task for the participants was to identify how someone would feel following an event. Dangan et al., (ibid.) found that even 75% of adult persons with ID are successful on tasks requiring to link events and appropriate emotions.

Differentiating thoughts, feelings and behavior

Sams et al., (Sams, Collins & Reynolds, 2006) assumed that differentiating thoughts, feelings and behavior, as basic elements of cognitive model of emotional problems and their treatment, is an important prerequisite for a successful participation in psychotherapy. They used an adapted version of a task for children designed by Quakley et al., (Quakley, Coker & Reynolds, 2004) in order to investigate differentiating of thoughts, feelings and behavior in a sample of adult persons with learning disabilities (which is another term for intellectual disability, see Kaljača, 2008). The intellectual quotient of participants ranged from 50 to 72.

The task consists of six short stories. In each story, the main character completes an action and experiences a thought and feeling. The gender of the main character was changed to be the same as the gender of the participant. The activities depicted in the stories are relevant to adults with ID. For example: „Peter/Sarah knew it was the last day of his/her holiday. Peter/Sarah went to pack his/her suitcase. Peter/Sarah felt sad that he/she was going home today." (Sams et al., ibid., p. 28). Three stories depicted positive feelings and three stories depicted negative feelings. The order in which thoughts, feelings and behavior appeared in stories was counterbalanced. Stories were read by the experimenter. Sentences which expressed thoughts, feelings, or behaviors were also written on cards. The participants were asked to identify each sentence as expressing thought, feeling, or emotion. The investigators were interested to find out whether a visual cue aids performance and they compared the performance on two versions of the task – in cue and non-cue condition. In cue condition the stories were read out loud and then the three sentences expressing thought, feelings or behavior were read in turn and presented on cards. The participants were asked to put each card into one of three boxes labelled „thinking sentences", „feeling sentences", and „doing sentences". On the box for sentences expressing thoughts there was a picture of a man and a woman with thought bubbles. On the box for sentences expressing behavior, there was a picture of a man gardening and a woman running. On the box for feelings sentences there was a picture of faces of a man and a women, one looking happy and the other looking sad. In no-cue condition, the boxes for sorting sentences were not used. Instead, participants for card answered verbally or non-verbally whether the written sentence expresses thought, feeling, or behavior. The results showed that visual cue did not aid performance.

The maximum possible score on the task was 18 (for each of the six stories accurately recognized emotions, thoughts and behaviors). The average score within the sample was 9, 75, mode was 6, and the scores ranged from 5 (which may result from random answering) to 18. One participant (out of 59) had the score 18, and 14 participant had a score above 12. General achievement on the task was positively correlated with receptive vocabulary, general intellectual quotient and verbal intellectual quotient. There was no significant correlation between task achievement and manipulative intellectual quotient.

According to the authors of the study, the results suggest that persons with ID mostly have difficulties in differentiating thoughts, feelings and behaviors, but that there are great interindividual differences among them in this ability. The authors conclude that

persons with ID who participate in cognitive-behavioral therapy may need a careful education and socialization regarding cognitive model and concepts which this model comprises.

Understanding the mediating role of cognitions

According to the cognitive model of emotional problems and disorders, situations, or events, do not cause emotional states and behavior of persons. Thinking and beliefs which a person holds regarding situations and events determine her/his emotional and behavioral responses. This core assumption of cognitive approach is most clearly expressed by Albert Elis (Ellis, 1962, 2001; Ellis & Dryden, 1997) through the so called ABC model of emotional disorder. In that model, A (activating event) represents events, or situations, B (belief) represents beliefs which a person has concerning that events/situations, a C (consequence) stands for effects in the domains of emotions and behaviors. The therapy focuses on changing dysfunctional cognitions (B), which, as a result, leads to the replacement of undesirable emotions and behaviors with functional, adaptive ones (C). Therefore, an important question is whether persons with ID are capable to understand the causal relationship between thoughts and resulting emotions and behavior, as this is the basis for understanding the rationale of changing cognitions which is aimed to in the process of cognitive-behavioral psychotherapy.

Adults with ID have great difficulties to make a conclusion about probable thinking, based on the descriptions of situations and emotions, for example: „You are in bed one night and hear a loud noise downstairs. You feel happy. What might you be thinking?" (Dagnan & Chadwick, 1997). In the following study, the authors changed the method of the assessment of understanding of the mediating role of cognition in the relationship between situations and emotional responses (Dagnan, Chadwick & Proudlove, 2000). They applied a task in which participants are asked to identify appropriate emotion, given the scenario (situation) and the evaluative belief. According to the ABC model (Ellis, 1962, 2001; Ellis & Dryden, 1997), given the A and the B, participants are asked to choose appropriate C. In total five scenarios are presented, each of them two times, once with a positive and once with a negative evaluative belief. Participants were asked „Do you feel happy or sad?". Two scenarios were positively valenced (e. g. finishing the job first) and three scenarios were negatively valenced (e. g. not being spoken to by friends). The congruent and incongruent combinations of scenarios and evaluative beliefs were used. Congruent combinations were those in which positive scenario is paired with positive evaluation, and negative scenario is paired with negative evaluation. Incongruent were those combinations in which positive scenario was paired with negative evaluation, or negative scenario was paired with positive evaluation. An example of congruent combination is: „You walk past a group of friends and they don't say hello... and you think I'm not likable. Do you feel happy or sad?", and an example of incongruent combination is: „You loose at a game of cards...and you think I'm good at things. Do you feel happy or sad?" (Dagnan et al., 2000: 630).

The other task used in this study was to pick evaluative belief, given the scenario and emotion, or, expressed in terms of the ABC model, A and C are given, and the participant is asked to pick B. In the same way as in the previous task, there were congruent

and incongruent combinations of scenarios and emotions. An example of congruent combination is: „Your friend shouts at you ... and you feel sad. Would you be thinking I'm likable or I'm not likable?" (ibid., p. 630), and an example of incongruent combination is „You're in a race and you win the race... and you feel sad. Would you be thinking I'm better than everyone or I'm worse than everyone?" (ibid., p. 630).

On the task of recognizing the emotion when scenario and evaluative belief are given, 10% of participants gave 8 or more accurate answers (the maximum possible score is 10). The participants were much more successful when answering congruent combinations (37,5% gave all accurate answers) than when giving answers to incongruent combinations (only one person out of 40 gave all accurate responses). On the task of recognizing evaluative belief, when scenario and emotion are given, 25% of participants had 8 or more accurate answers. There was again better achievement on congruent than on incongruent combinations. The authors of the study assume that only responses to incongruent combinations are indicative of a person's ability to understand cognitive mediation, because only in these combinations it is required that persons give priority to beliefs over situations in determining emotions and behaviors.

Joyce et al., (Joyce, Globe & Moody, 2006) applied the same tasks as Dungan et al., (Dagnan, Chadwick & Proudlove, 2000) and the results they obtained were consistent with the results of the original study. It was found, as in the previously described study, that participants had difficulties to accurately link scenarios (situations), beliefs, and emotions, both when emotions or beliefs were congruent with scenarios and when there was no such congruency. Also consistent with the previous study, the incongruent combinations were much harder for the participants compared to congruent combinations. According to the authors of the study, the achievement on these tasks of cognitive mediation indicate the person's ability to engage in cognitive-behavioral therapy and to benefit from it. Following this, they conclude that persons with ID mostly may not be able to use more complex models of cognitive-behavioral therapy. However, they suggest that people with ID may acquire necessary skills and that their understanding of cognitive model may be promoted through the support and teaching by psychotherapists.

Dagnan et al., (2000) and Joyce et al., (2006) state that psychotherapist may promote the development of the necessary skills and the understanding of cognitive model in clients with ID through structured interventions, and that empirical test of the efficacy of these interventions is needed.

According to our opinion, it is not justified to derive conclusions about suitability of persons with ID for cognitive-behavioral therapy, solely from their achievement on experimental tasks of understanding cognitive mediation such as tasks described above. Especially tasks with incongruencies between situations and beliefs or emotions may confuse persons with ID. In real-life situations such incongruence very rarely occurs. In real situations, beliefs which lead to emotional problems are deviant. For example, they may represent an over generalization from a certain situation (e. g. failing in this task means I am a total failure), but they are not completely in contrast with the beliefs that would be expected in a given situation as it is the case in the described incongruent cognitive mediation tasks.

CONCLUSION

Further research on cognitive abilities in persons with ID as prerequisites for their participation in cognitive-behavioral therapy is needed. So far, empirical investigations show that persons with ID who have developed language abilities and who are in the range from mild to moderate ID may successfully participate at least in some procedures of cognitive-behavioral therapy, such as procedures for the enhancement of self-management skills (Taylor, Lindsay & Willner, 2008).

Some authors (e. g. Dagnan et al., 2000; Joyse et al., 2006) express the opinion that higher functioning persons with ID might develop skills and understanding needed for the cognitive-behavioral approach through an education as a part of psychotherapeutic process. However, hitherto there are no recommendations concerning appropriate methods of this education in the literature. The subject of the further studies should be the development of these methods and their empirical test. We assume that, instead of experimental studies on suitability of persons with ID for cognitive-behavioral therapy, research should focus on the real process of psychotherapy and the understanding which persons with ID express within that process. This would highlight the difficulties which these persons meet and which should be overcome in order to promote their participation in psychotherapy.

Further, up to now, research has focused almost exclusively on cognitive abilities in persons with ID which are important for their engagement in psychotherapy based on Beck's cognitive model (Beck, 1967). Today, many branches have developed within the family of cognitive-bahavioral therapies (Herbert & Forman, 2011). We assume that these various orientations differ in terms of which cognitive abilities are required for their application. Therefore, further research is needed on suitability of persons with ID for these different forms of psychotherapy.

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