According to Bandura, a sense of personal efficacy is the foundation of human agency. Traumatic experiences cause important changes in activity, emotions and cognitive processes, in its extreme form leading to the development of posttraumatic stress disorder (PTSD). Diverse studies focused on the relation between self-efficacy and PTSD symptoms, indicate, in general the vulnerability effect. Some results suggest increase in self-efficacy beliefs in individuals who survived a traumatic experience and coped well with its consequences. The aim of this research was to determine whether the PTSD treatment leads to the increase of self-efficacy level among motor vehicle survivors. Eighty seven participants diagnosed with PTSD were randomly assigned to different types of therapy (psychotherapy, pharmaco-therapy or combined therapy). The levels of PTSD symptoms, posttraumatic cognitions and self-efficacy were assessed by self-report measures before treatment and at one year follow-up. The results indicate that, in a longer time after trauma and therapy - PTSD symptoms influence self-efficacy level and this relation is mediated by negative posttraumatic cognitions about the self. An increase in self-efficacy level between the assessment points was independent of the type of therapy and was observed only among subjects whose PTSD symptoms were significantly reduced during therapy process. Significant reduction of PTSD symptoms after the therapy process (regardless the type of therapy) leads to the reduction of negative posttraumatic cognitions about self and to the increase of general self-efficacy.

Key words: Prolonged Exposure, PTSD, trauma, general self-efficacy, negative posttraumatic cognitions

INTRODUCTION

Posttraumatic stress disorder (PTSD) is diagnosed among people who experienced or witnessed death, serious injury or physical integrity threat, reacted with strong fear and helplessness, after which experience intrusive thoughts about the traumatic event, avoid factors reminding about the trauma, feel physiological symptoms of stress as well as high arousal of autonomic nervous system (APA, 2000). About 40% of people who develop PTSD symptoms as a result of confrontation with traumatic stressor have spontaneous remission and come
back to their previous functioning level. Others experience chronic and long-lasting PTSD symptoms that significantly lower the quality of their life (see: Popiel & Pragłowska, 2009). Therefore studying the factors preventing people from PTSD development as well as helping them to recover after trauma seem to be of great importance.

**PTSD and general self-efficacy**

Cognitive theories point out the role of cognitive factors in the development and maintenance of chronic PTSD symptoms (Ehlers & Clark, 2000; Foa, Ehlers, Clark, Tolin & Orsillo, 1999). Authors of these concepts focus on different aspects of cognition – general characteristics of cognitive style of an individual, or beliefs changed by the traumatic experience. Among different mechanisms that constitute human activity people’s cognitions about their influence on own functioning and life events, called general self-efficacy seem to play a central role (Bandura, 1995, 2007, see: Benight & Bandura, 2004). Researchers differentiate between general self-efficacy (GSE) which results from life experiences and reflects perceiving oneself as competent and skilled enough to deal effectively with variety of life moments (Łuszczyńska, Scholz & Schwarzer, 2005) as well as specific self-efficacy that refers to particular situations.

Previous research results suggest that self-efficacy may be considered as one of the key cognitive factors influencing a development and reduction of PTSD symptoms as well as general distress after trauma experience (Benight & Bandura, 2004; Łuszczyńska, Benight & Cieślak, 2009) regardless the type trauma (Benight & Bandura 2004), among people who experienced natural disaster (Benight et al., 1997; Benight et al., 1999, Benight & Harper, 2002, Benight, Swift, Sanger, Smith & Zeppelin, 1999), terrorist attack (Benight, Freyaldenhoven, Hughes, Ruiz & Zoschke, 2000; Solomon, Gelkopf & Bleich, 2005), war (Ferren, 1999; Ginzburg, Solomon, Dekel & Neria, 2003; Solomon, Benbenishty & Mikulincer, 1991; Weisenberg, Schwarzwald & Solomon, 1991) or motor vehicle accident (Łuszczyńska, Benight, Cieślak, Kissinger, Reilly & Clark, 2009).

Strong GSE may improve a positive evaluation of own possibilities of coping with trauma and its consequences, whereas low level of GSE is assumed to be a risk factor of PTSD development after trauma (Łuszczyńska, Benight & Cieślak, 2009). In one of the few longitudinal studies Weisenberg, Schwarzwald and Solomon (1991) concluded that changes in the self-efficacy level in the area of coping with war experience were independent from the change in PTSD diagnosis during first three years after war (we lack information whether the soldiers who participated in the research received any kind of therapy). Results of other research suggest the possibility of inverse effect, namely PTSD impact on self-efficacy, particularly in a longer time after the trauma. It was indirectly suggested by Bandura himself (1982), who claimed that self-efficacy increases as a result of success and decreases after failure. Consistently, Ginzburg et al. (2003) proved that war veterans who developed combat stress reaction (CSR) showed lower self-efficacy level compared to veterans who did not develop CSR and those who received medal for bravery (in fact their self-efficacy level was the highest from all three groups). Ferren (1999), who carried out a study among adolescents from Bosnia and Croatia who escaped from the area of Balkan war, showed that people who experienced trauma and developed PTSD had higher self-efficacy than people who were not exposed to trauma at all. The tragic events from the Balkan war itself may have been an experience that gave the force and belief in people’s possibilities of surviving and coping even with most extreme conditions.

**The role of posttraumatic cognitions**

Cognitive theories explaining the maintenance of PTSD symptoms stress also that processing of the traumatic event and its consequences relates
to the development of specific cognitions about self, the world as well as own role in trauma occurrence and approach during and after the traumatic event, frequently leading to self-blame for survival (Startup, Makgekgenene & Webster, 2007) and developing PTSD symptoms (I’m weak, if I still did not recover, something is wrong with me, that may be brain damage; Foa et al., 1999). Consequently, people start to use different cognitive and behavioural strategies of avoiding the memories or any situations related to trauma. Avoidance not only handicaps the process of trauma transformation and inclusion to autobiographical memory structures, but also prevents people from gaining new experiences that might falsify dysfunctional posttraumatic cognitions. Therefore avoidance does not foster beliefs about self-efficacy in coping with problems. Foa et al. (1999) proposed three types of posttraumatic cognitions: beliefs about the self, the world and self-blame and developed a measure Posttraumatic Cognitions Inventory (PTCI). The study on PTCI, has proved the divergent and convergent validity of the construct – more frequent occurrence of specific beliefs among people with PTSD in comparison to people with other disorders, however the convergent validity of self-blame among motor vehicle accident survivors was not confirmed in replicated research (Beck, Coffey, Palyo, Gudmundsdottir, Miller & Colder, 2004). The research about relations between posttraumatic cognitions, PTSD symptoms and beliefs about self-efficacy (specific, related to coping with trauma) conducted by Cieślak, Benight and Lehman (2008) proved the mediational role of the latter as the most proximal cognitive factor influencing the PTSD also among motor vehicle accident survivors. The important role of posttraumatic cognitions in PTSD development and maintenance was supported by their inclusion in the PTSD diagnostic criteria in the last DSM-5 classification (APA, 2013).

Therapy impact on cognitions change

According to theoretical assumptions of cognitive-behavioural therapies for PTSD, the modification of beliefs (including these referring to one’s self-efficacy) should result in the improvement of functioning. Some studies point out the modification of posttraumatic cognitions as a key mechanism of the prolonged exposure therapy (PE – Zalta et al., 2013; McLean, Yeh, Rosenfeld & Foa, 2015), however, as Haagernas, van Minnen and de Rooij (2010) proved, this relation may be inverse, especially in therapies of more behavioural character like PE.

The decrease of symptoms and improvement of everyday functioning as a result of PTSD therapy may be treated as a proof of one’s competencies in coping with trauma consequences, as stated by Bandura’s “independently to their kind, therapeutic procedures change the expectations regarding ones self-efficacy” (2007, s. 85). Although Łuszczyńska, Benight and Cieślak (2009), basing on meta-analysis, suggest the lack of clear proof that the diagnosis or decrease in PTSD symptoms impact the self-efficacy level, the lack of systematic longitudinal research taking into account the trauma-focused therapy of people with clinical diagnosis of PTSD needs to be underlined. Similar research conducted in the area of other disorders seem to confirm these considerations. Findings of 28 from 33 research included in the meta-analysis by Fentz, Arendt, O’Toole, Hoffart and Hougaard (2014) showed that psychotherapy of panic disorder resulted in the significant increase of self-efficacy (1.41 d-Cohen effect size). Another study, by the same researchers showed that the relations between self-efficacy and the level of anxiety during the cognitive-behavioural psychotherapy is two-sided: higher self-efficacy leads to the reduction of anxiety, which then impacts the self-efficacy level (Fentz et al., 2013). Iranian researchers, Pasha, Faramarzi, Esmailzadeh, Kheirkhah and Salmalian (2013) proved that an increase in self-efficacy level which was a result of cognitive-behavioural psychotherapy as well as fluoxetine
pharmacotherapy, was higher among women (with depressive symptoms, treated because of infertility) who received psychotherapy. Schaumberg, Kuerbis, Morgenstern and Muench (2013) who studied men with alcohol addiction receiving psycho- and pharmacotherapy proved that the highest growth in self-efficacy was among individuals who received cognitive-behavioural psychotherapy but were convinced of taking placebo. It may suggest that pharmacotherapy, as opposite to psychotherapy, may be perceived as an external source of change.

The abovementioned studies do not settle whether the self-efficacy growth is a result of new skills gained during the therapy, a mechanism of (psycho)therapy process or a resource important for relapse prevention. The relation between self-efficacy beliefs and posttraumatic cognitions has not been established as well.

**Hypotheses**

Basing on the presented literature review it was assumed that successful treatment of PTSD resulting in clinically significant symptom decrease or remission may constitute a positive experience about survival of trauma and putting an effort in the recovery process, therefore decreasing PTSD symptoms will impact the growth of self-efficacy (hypothesis 1). Therapy, apart from influencing the level of symptoms should also promote the decrease of negative posttraumatic cognitions, then the relation between PTSD symptoms and GSE will be mediated by negative posttraumatic cognitions (hypothesis 2), and in a result of PTSD therapy the significant growth of self-efficacy level will occur (hypothesis 3). Accepting these hypotheses implicates that the reverse direction of this relation, namely impact of self-efficacy on PTSD symptoms by negative posttraumatic cognitions should be statistically insignificant.

There is a question, whether self-efficacy growth depends on the kind of treatment, or on the change (decrease) in the level of PTSD symptoms but due to limited amount of research in this area, the direct hypothesis was not formulated. However, it is expected that the higher increase of self-efficacy level should occur in individuals who were treated with psychotherapy and combined psycho- and pharmacotherapy when compared to people receiving only pharmacotherapy as well as among individuals with significant decrease of symptoms, compared to those with no remission.

**METHOD**

**Sample**

The sample consisted of participants of motor vehicle accidents (MVA) diagnosed with PTSD, who took part in the therapy within the Project TRAKT (detailed description of the sample, procedure of the study and applied types of the treatment of PTSD is presented in the paper prepared by Popiel, Zawadzki, Pragłowska & Teichman, 2015). Participants were investigated twice: at pretreatment and, the second time at follow up – one year after the treatment, with the same battery of inventories. From the whole sample of subjects, who completed treatment (N=138) only the data of participants, who took part in the second assessment and for whom the whole set of data was obtained (without subjects who did not completed the therapy and did not fill out all inventories) were analyzed. The final sample consisted of 87 participants (69 females and 18 males) of age 19-65 years (\(M=36.09, SD=12.84\)). Participants were randomly assigned to the three types of individual, 12 week treatments: psychotherapy by Prolonged Exposure (Foa, Rothbaum & Hembree, 2007) – \(n_P=58\), pharmacotherapy by SSRI medication – \(n_F=10\) and combined treatment (above mentioned methods of psycho- and pharmacotherapy) – \(n_C=19\). In the entire sample 54.0% of participants had an university level education, 36.8% – college, 5.7% – job and 3.4% – basic education level. The first assessment was conducted in the period ranging from one to 48 months after the MVA (\(M=13.96, SD=17.79\)).
Assessed variables and instruments

In the study the following variables were assessed by the set of inventories:

1. Intensity of PTSD symptoms, according to the DSM-IV, was assessed by the “PTSD inventory – clinical version” (PTSD-C; Zawadzki, Bieniek, Strelau, Oniszchenko & Sobolewski, 2002). In the analysis the general score, calculated as a sum of all 40 items, was taken into account (clinical diagnosis was stated on the basis of cut-off score). Reliability assessed by the α-Cronbach coefficient in subsequent occasions was equal to .94 and .98.

2. General self-efficacy was assessed by GSES inventory (General Self-Efficacy Scale). GSES was developed by Schwarzer & Jurjazalem (1995) and translated into Polish by Juczyński (2009). It comprises 10 items, which enable to calculate a general score. Cronbach’s α in subsequent occasions was equal to .87 and .91.

3. Negative posttraumatic cognitions about the self and the world, and focusing on blaming her/himself were assessed by Polish version of PTCI (Posttraumatic Cognitions Inventory) developed by Foa et al. (1999; Polish translation: Dragan, Gulecz & Wójtowicz, 2005). PTCI comprises 33 items, from which 21 assess negative cognitions about the self, 7 – negative cognitions about the world, and 5 – self-blame. Reliability coefficient of PTCI scales was equal .91 and .97 for the Scale of Negative Cognitions about the Self, .79 and .92 – Negative cognitions about the World, and .82 / .85 – for Self-blame scale.

Procedure of data analysis

Analysis of data started from linear regression with posttraumatic negative cognitions as predictors of general self-efficacy and intensity of symptoms of PTSD. The analysis showed that only negative cognitions about the self are related to both variables, so in the subsequent analyses these cognitions were taken into account. It was demonstrated also that the level of negative cognitions about the self and intensity of symptoms of PTSD decreased, while the level of general self-efficacy increased after therapy in the entire sample. In the next step the correlations among variables were calculated, which revealed the homogenous pattern of relationships in both occasions: the highest positive correlations between intensity of symptoms of PTSD and negative cognitions about the self, modest negative correlations between negative cognitions and GSE, and the lowest negative correlations between GSE and symptoms of PTSD. Descriptive statistics of all variables and their intercorrelations are presented in Table 1 and 2.

On the basis of hypotheses the model of relationships among variables was assumed, in which in the second assessment (up to one year after therapy) intensity of symptoms of PTSD influences general self-efficacy through negative cognitions about the self. The model was verified by path analysis with Maximum Likelihood method (ML) applied by Lisrel 8.80. In the last step the ANCOVA (analysis of covariances) was applied to examine to which extent the change in the assessed variables depended on type of treatment and/or the diagnosis of PTSD after therapy.

Table 1. Descriptive statistics of assessed variables

<table>
<thead>
<tr>
<th>Variable/assessment</th>
<th>Assessment 1 M (SD)</th>
<th>Assessment 2 M (SD)</th>
<th>d-Cohen (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSE</td>
<td>27.18 (4.16)</td>
<td>28.84 (4.73)</td>
<td>–0.37 (–.67; –.07)</td>
</tr>
<tr>
<td>NCS</td>
<td>88.23 (21.55)</td>
<td>60.23 (30.44)</td>
<td>1.06 (.74; 1.37)</td>
</tr>
<tr>
<td>PTSD</td>
<td>72.68 (18.30)</td>
<td>37.11 (28.21)</td>
<td>1.50 (1.15; 1.82)</td>
</tr>
</tbody>
</table>

Note. GSE – general self-efficacy; NCS – negative cognitions about the self; PTSD – intensity of symptoms of PTSD; M – mean, SD – standard deviation; d-Cohen – d-Cohen statistics of effect size with 95% confidence intervals.
RESULTS

In the first step the theoretical model (M1), assuming the impact of symptoms of PTSD on GSE through negative cognitions about the self was verified. The results showed that the data fit the model very well. The path from general self-efficacy and symptoms of PTSD proved to be insignificant, which suggest full mediation of this relation thru negative posttraumatic self-cognitions and confirms hypotheses 1 and 2.

In the next step the opposite relationship was tested, it means impact of GSE on symptoms of PTSD mediated by negative cognitions about the self (M2). Indices of fit of the model were much worse than for Model 1. Indices of fit obtained for both models are displayed in Table 3.

The final model of relationships among all variables, assuming the direction of which they are influenced by each other after therapy, is presented in Figure 1.

In the last step it was examined to which extent the change in the assessed variables depended on type of treatment and/or maintaining symptoms of PTSD one year after therapy (the change in intensity of symptoms of PTSD was also taken into account). One of several indices of clinical significant change was applied (see Kazdin, 1999): on the basis of results of inventory assessing symptoms of PTSD the sample was split into group of subjects who recovered from PTSD after therapy (cut-off point equal or lower than 45 points in the inventory calculated on the basis of results of previous analyses) and subjects for whom the inventory scores were located in the area for patients suffering from PTSD (46 points or more). The ANCOVA was applied with type of treatment and diagnosis of PTSD in the second assessment as factors influencing the level of GSE in the second occasion (with the control of initial level of general self-efficacy; the results are presented in Table 4). The same analysis was done for negative cognitions about the self and intensity of symptoms of PTSD.

Analysis revealed that the level of GSE after therapy depends only on diagnosis of PTSD and it does not depend on the type of therapy (which confirms hypothesis 3). The similar results were obtained for negative cognitions about the self and intensity of symptoms of PTSD.

<table>
<thead>
<tr>
<th>Variable</th>
<th>GSE 1/2</th>
<th>NCS 1/2</th>
<th>PTSD 1/2</th>
<th>Variable</th>
<th>GSE 2</th>
<th>NCS 2</th>
<th>PTSD 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSE 1/2</td>
<td>-.40*</td>
<td>-.20*</td>
<td></td>
<td>GSE 1</td>
<td>.40*</td>
<td>-.23*</td>
<td>-.06</td>
</tr>
<tr>
<td>NCS 1/2</td>
<td>-.60*</td>
<td>.64*</td>
<td></td>
<td>NCS 1</td>
<td>-.27*</td>
<td>.42*</td>
<td>.25*</td>
</tr>
<tr>
<td>PTSD 1/2</td>
<td>-.48*</td>
<td>.85*</td>
<td></td>
<td>PTSD 1</td>
<td>-.13</td>
<td>.36*</td>
<td>.40*</td>
</tr>
</tbody>
</table>

Note. GSE 1/2 – general self-efficacy, NCS 1/2 – negative cognitions about the self, PTSD 1/2 – intensity of symptoms of PTSD in 1 and 2 assessment (data for first occasion are given above, for the second occasion – below the diagonal). Significant correlations at \( p <.05 \) are marked by an asterisk.

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>( \chi^2 )</th>
<th>( p )</th>
<th>GFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>7</td>
<td>10.93</td>
<td>.14</td>
<td>.96</td>
<td>.08</td>
</tr>
<tr>
<td>M2</td>
<td>7</td>
<td>23.04</td>
<td>.01</td>
<td>.92</td>
<td>.17</td>
</tr>
</tbody>
</table>

Note. M1 – model assuming impact of symptoms of PTSD on general self-efficacy thru negative cognitions about the self; M2 – model assuming impact of general self-efficacy on symptoms of PTSD thru negative cognitions about the self.
Post-hoc $t$-Student tests were also applied to assess significance of differences in the level of assessed variables between both assessments for subgroups with and without the diagnosis of PTSD at the second assessment point (Table 5).

Analysis confirmed that significant increase of general self-efficacy was recorded only in subjects with remission of PTSD (the symptoms of PTSD below the threshold required for diagnosis) and demonstrated change in negative cognitions about the self. Analysis of effect-sizes in the group of subjects who recovered from PTSD showed also that the change was the highest for intensity of symptoms of PTSD, comparatively lower for negative cognitions about the self, and the lowest – for self-efficacy. These results are fully congruent with the model of relationships among all variables depicted in Figure 1: the change of symptoms evokes the change in post-traumatic negative cognitions about the self and leads to changes in general self-efficacy.

**DISCUSSION**

The paper describes the impact of posttraumatic stress disorder symptoms on the level of general self-efficacy, including the role of negative post-traumatic cognitions, in a sample of motor vehicle accident survivors receiving treatment for PTSD.
Hypotheses 1 and 2 referred to the impact of PTSD symptoms on general self-efficacy level after PTSD therapy, mediated by posttraumatic cognitions. Results suggest that the relation between PTSD symptoms and self-efficacy level is mediated by negative cognitions about the self. This result is consistent with other research, where the same kind of posttraumatic cognitions was a significant predictor of PTSD development, whereas cognitions about the world and self-blame were not always significant (Beck et al., 2004; Cieslak, Benight & Lehman, 2008; Foa et al., 1999). This effect may be related to the homogeneity of the group and the type of trauma. Motor vehicle accidents, in most cases caused by human factors, which may result in doubts regarding ones abilities to cope with the situation, especially in the face of difficult and long-lasting consequences of the accident. Therefore the result of this study does not lever the sense of including three different kinds of posttraumatic cognitions to PTSD criteria in DSM-5 classification.

The results also suggest that the direction of the relation is from PTSD symptoms, through posttraumatic cognitions, to self-efficacy, which
means that perceiving and feeling of PTSD symptoms decrease and improvement in comfort and functioning influence the beliefs about incompetency in dealing with the situation after the trauma and, as a consequence, lead to general self-efficacy growth. This result is consistent with the one obtained in the similar research of Hagenaars, van Minnen and de Rooij (2010), in which the change in posttraumatic symptoms measured with PTCI was secondary to the change in PTSD symptoms level after PE therapy (self-efficacy level was not measured in this study).

A discrepancy with Cieślak, Benight and Lehman (2008) research is apparent and may be a result of different definitions of measured constructs. GSE is a sum of different life experiences and is a generalised belief about being able to deal with many different life situations, while specific self-efficacy measured by mentioned authors relates only to coping with trauma consequences. Therefore it is closer to the construct of negative posttraumatic cognitions measured by PTCI. The interpretation is not easier taking into account that 6 out of 21 statements of cognitions about the self scale from PTCI are about coping with trauma consequences (I can't deal even with the slightest upset, If I think about the accident I will not be able to handle it..., or My reactions since the accident show that I am a lousy coper). Although the results of both research are not free from idem per idem plea, it is worth noting that both are consistent with social-cognitive theory. Cieślak, Benight and Lehman show the role of specific beliefs about own efficacy in the increase of PTSD symptoms in the first months after the trauma. The results of our study refer to the relations between self-efficacy and PTSD symptoms in a longer time after the trauma (about 2 years), which is enough to reciprocal effects occurrence. Presented results suggest further mechanism that takes place among

Table 5. Significance of differences in the level of assessed variables for groups differing in diagnosis of PTSD after therapy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Descriptive statistics</th>
<th>Differences between assessment points</th>
<th>t</th>
<th>p</th>
<th>d-Cohen (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSE 1 – GSE 2</td>
<td>M1 (SD1)</td>
<td>M2 (SD2)</td>
<td>M (SD)</td>
<td>-2.96 (4.70)</td>
<td>-4.76</td>
</tr>
<tr>
<td>NCS 1 – NCS 2</td>
<td>85.45 (21.05)</td>
<td>44.79 (18.83)</td>
<td>41.88 (21.43)</td>
<td>14.62</td>
<td>.00</td>
</tr>
<tr>
<td>PTSD 1 – PTSD 2</td>
<td>68.71 (17.89)</td>
<td>20.07 (13.42)</td>
<td>48.64 (20.93)</td>
<td>17.70</td>
<td>.00</td>
</tr>
</tbody>
</table>

Note. GSE 1 and 2 – general self-efficacy, NCS 1 and 2 – negative cognitions about the self; PTSD 1 and 2 – intensity of symptoms of PTSD in 1 and 2 assessment; M1 and M2 – mean of scores in the first and second occasion, SD1 and SD2 – standard deviation in the first and second occasion; M – mean of differences between both assessments and SD – standard deviation of differences of scores; t – t-Student test for pairs, p-level of significance; d-Cohen coefficient for differences in both groups: GSE=.84 (95% CI: .38; 1.30); NCS=1.66 (1.15; 2.17); PTSD=1.93 (1.40; 2.46).
people, whose fully developed PTSD symptoms constituted additional stressor and coping with them was an experience that enriched their system of self-efficacy cognitions.

Hypothesis 2 assumed that successful PTSD therapy would result in the self-efficacy growth. The results suggest that self-efficacy increase appears among people who received any kind of therapy (psycho-, pharmaco- and combined therapy) which allows to ask a question about the basis of this change – whether it depends on the therapy itself or on the reduction of disorder symptoms. The analyses proved that the kind of therapy is meaningless for the self-efficacy growth which depends only on the reduction of PTSD symptoms – only people with remission of PTSD symptoms did show significant self-efficacy growth. The lack of discrepancies between types of therapy may be understood in two different ways. Firstly, self-efficacy is one of four main mechanisms of exposure therapy process (Bandura, 1977). People who are able to confront with anxious stimuli, give up their avoidance reaction and overcome their anxiety are able to see that they have more resources and resiliency that they have assumed previously, which may lead them to take next challenges and generalise treatment effects. The same effect may be achieved thanks to pharmacotherapy, as effects of the drugs lead to the decrease of anxiety to the level that is possible to bear, which may encourage patients to the revision of their beliefs about not being able to cope with it similarly to exposure process. If psychological mechanisms of psychotherapy were carefully examined, pharmacotherapy process is still the area for further research, especially that the amount of research directly comparing pharmaco- and psychotherapy in PTSD treatment is still limited (NICE, 2005).

Obtained results are consistent with cited studies on people with alcohol addiction problem (Schaumberg et al., 2013), infertility (Pasha et al., 2013) and panic disorder patients (Fentz et al., 2013; Fentz et al., 2014), in which therapy process and the reduction of symptoms were related to the self-efficacy growth. The discrepancy with Weisenberg, Shwarzwald and Solomon conclusions (1991) may be a result of the specificity of the research (men, specific for the combat situation self-efficacy).

The conclusions of this research are limited to some extent. First of all, they refer only to motor vehicle accident survivors, therefore it is worth carrying out analogical analyses among people who experienced different type of trauma in order to check the generalisation of the results. In this research only the construct of general self-efficacy, that constitutes relatively stable individual’s characteristic modified only in a longer time and by individual experiences, non-specific for trauma situation was taken into account. Finally, the direction shown in our study may be specific for the PE, a method that relies on active dealing with anxiety during the exposure (analogically to anxiety decrease in the result of pharmacotherapy), that may start the modification of beliefs about self-efficacy. Therefore in other therapies, especially cognitive, that lead to the increase in self-efficacy of dealing with trauma, the reduction of PTSD symptoms may depend on self-efficacy change rather than being a factor causing changes in self-efficacy level. In our opinion, the change mechanism analysed in this paper may be specific for the type of psychotherapy, the group or trauma specificity.

CONCLUSIONS

The results of the study on motor vehicle accident survivors diagnosed with PTSD, receiving psychotherapy, pharmacotherapy or combined therapy suggest that significant reduction in PTSD symptoms as a result of treatment leads to the increase of self-efficacy level, and this process is mediated by decreasing level of posttraumatic cognitions about the self.
REFERENCES


