OPTIMISM, PESSIMISM AND NEGATIVE MOOD REGULATION EXPECTANCIES IN CANCER PATIENTS

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Abstract
The purpose of this study was to investigate the interrelations among optimism, pessimism and negative mood regulation expectancies in predicting distress levels in a sample of women (N=64) diagnosed with breast or cervical cancer. The study offers empirical data that could clarify the relation between these variables impacting emotional distress. Our results indicate that negative mood regulation expectancies completely mediated the effects of pessimism on symptoms of depression and anxiety. The direct relation between negative mood regulation expectancies and emotional distress can be explained by conceptualizing these expectancies as specific beliefs within a response expectancy model.

Keywords: anxiety, depression, cancer, negative mood regulation expectancies, optimism, pessimism

Optimism and pessimism

A large body of evidence supports the idea that the expectancies about the future have a significant impact on the present well-being (Andersson, 1996). Studies show that optimistic people have lower levels of distress in various stressful situations (Andersson, 1996), they adjust better to stressors (Aspinwall & Taylor, 1992; Carver et al., 2005; Scheier, Carver, & Bridges 2001; Scheier & Carver, 1987) and they report a higher quality of life (Gustavsson-Lilius, Julkunen & Hietanen, 2007). Optimism and pessimism, defined as generalized positive and negative outcome expectancies, respectively, are considered to represent important predictors of adjustment (Scheier & Carver, 1985).

The hypothesis that optimism and pessimism influence health and coping with illness has been investigated in numerous studies (Scheier & Carver, 1992). Several of these studies are focused on the benefits of optimism for cancer patients, showing that a higher level of optimism is associated with a less negative mood both at the time of diagnosis and during treatment (Carver et al., 1993;
Carver, Giunta et al., 2005; David, Montgomery, & Bovbjerg, 2006; Epping-Jordan et al., 1999; Stanton & Snider, 1993). These studies indicate that patients with higher levels of optimism have fewer symptoms of emotional distress while patients with higher levels of pessimism experience greater emotional distress. Pessimism has also been related to a higher rate of mortality in cancer patients (Schultz, Bookwala, Knapp, Scheier, & Williamson, 1996).

Despite the growing body of literature on the effects of optimism and pessimism, the mechanism by which these variables have an impact on emotional distress is not entirely understood. There are researchers who suggest that the effect of optimism on distress is mediated by more specific expectancies. For example, in a study by McGregor, Bowen, Ankerst, Andersen, Yasui and McTiernan (2004), the authors examined the relation between dispositional optimism and specific illness expectancies, showing that these expectancies partially mediated the effects of optimism on distress.

**Negative Mood Regulation Expectancies (NMR Expectancies)**

Beside optimism and pessimism, numerous studies support the impact of response expectancies on emotional distress. Kirsch (1985) developed the response expectancy theory, focusing on the relations between expectancies and automatic responses. Response expectancies are defined as anticipations of non-volitional reactions to stimuli and behaviors. Kirsch (1985) hypothesized that response expectancies are self-confirming, sufficient to cause automatic responses and directly related to non-volitional outcomes (i.e., are not mediated by other psychological variables) (Kirsch, 1985). Elaborating on this idea in the Rational-Emotive Behavior theory framework, David (2003) suggests that, once negative dysfunctional emotions are generated by irrational beliefs (Ellis, 1994), these emotions can than be maintained by response expectancies. In the study of Montgomery, David, DiLorenzo and Schnur (2007) results indicated that response expectancies, at least in part, accounted for the effects of irrational beliefs on distress.

Catanzaro and Mears (1990) have introduced the idea of a specific type of response expectancy, negative mood regulation expectancies, a personality variable defined as the perceived ability to alleviate a negative mood state.

The impact of negative mood regulation expectancies has been studied in relation to depression, anxiety, anger and other symptoms of emotional distress (Catanzaro, 1993; Catanzaro & Greenwood, 1994; Catanzaro, Horaney, & Creasey 1995; Mearns, 1994; Mearns & Mauch, 1998; Kirsch, Mears, & Catanzaro 1990; Surmann, 1999).

According to these studies, the belief that one will feel better could be sufficient to improve mood states, independent of the coping strategies that the person is using. Negative mood regulation expectancies tend to have self-confirming effects on mood and expecting to feel better actually helps people feel
better (Kirsch et al., 1990). Data from this line of research confirm a strong relation between negative mood regulation expectancies and mood states.

Other authors suggest that response expectancies for automatic outcomes could be related not only with mood states, but also with trait characteristics, such as optimism and pessimism, rather than with situational factors (Montgomery, David, DiLorenzo, & Erblich, 2003).

The general objective of this study was to investigate the interrelations among optimism, pessimism and negative mood regulation expectancies in predicting distress levels among cancer patients. So far there are no studies relating these constructs to one another and to emotional distress. Most of the studies regarding negative mood regulation expectancies have used students as participants. This is the first study that investigates this variable in cancer patients. The present study is focused on investigating the interrelations among optimism, pessimism and NMR expectancies and their impact on symptoms of anxiety and depression in the post surgical treatment (either radiotherapy or chemotherapy) period for cancer patients. There is an extensive number of studies showing that this specific point in their treatment can be both emotionally and physically difficult for the patients (Carpenter et al., 1998; DiLorenzo, et al., 1995; Fritzsche, Liptai, & Henke, 2004; Schnur et al., 2007; Schnur et al., 2009).

The present cross-sectional study had the following specific goals: 1) to examine the effects of negative mood regulation expectancies on post surgical symptoms of anxiety and depression, 2) to examine the effects of pessimism and optimism on patients’ symptoms of anxiety and depression, 3) to investigate the relations among optimism, pessimism and negative mood regulation expectancies 4) to investigate the meditational pathway by which optimism, pessimism and negative mood regulation expectancies contribute to anxiety and depression symptoms.

Based on the results of previous studies investigating the relations among optimism, pessimism and emotional distress, our prediction is that more optimistic patients will have fewer symptoms of anxiety and depression (lower levels of anxiety and depression), while more pessimistic patients will have more symptoms of anxiety and depression. Another prediction is that more optimistic individuals will have higher levels of negative mood regulation expectancies, while more pessimistic individuals will have lower levels of mood regulation expectancies.

According to response expectancy theory, our hypothesis is that patients with high levels of negative mood regulation expectancies will have fewer symptoms of anxiety and depression. The effect of optimism and pessimism on these negative mood states will be mediated by negative mood regulation expectancies.

Method
Participants

Post surgical patients, with cervical cancer or breast cancer, were recruited from a large oncological hospital. The eligibility criteria included: being at least 18 years old, having no other concurrent major illness, receiving either chemotherapy or radiotherapy for Stage 0-III cancer and being willing to participate in the study. Sixty-four women meeting the above criteria participated, from an initial pool of 71 participants referred to the study by hospital nurses (5 refused due to schedule and time concerns, and 2 refused due to lack of interest for the study). In the final sample, 14% of participants had a university degree and 43.3% had at least a college degree; 83% of them described themselves as Romanians and 17% described themselves as Hungarians; 62.5% were married.

Age ranged from 24 to 75 years (mean age = 50, SD = 9.41). At the moment of the study, they were all in the post surgical phase of the treatment and at the beginning of their post-surgical chemotherapy or radiotherapy treatment; 39% were scheduled for radiotherapy and 61% were scheduled for chemotherapy.

Procedure

All study measures were administered individually, in the hospital waiting room, just after treatment appointments. Informed consent was obtained from the patients, after the procedure had been fully explained to them.

Measures

The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), a 21 item questionnaire, was used to evaluate specific symptoms of depression. The scale has good psychometric properties.

The State-Trait Anxiety Inventory (STAI; Spielberger, 1983) was used to assess the anxiety symptoms, focusing on how respondents felt at that particular time.

The Life Orientation Test (LOT; Scheier & Carver, 1985) was used to assess dispositional optimism and pessimism. Four positively worded items measure optimism, four negatively worded items measure dispositional pessimism and four items are fillers. Although the LOT has been considered an one-dimensional measure of optimism, with summed higher scores showing a higher level of optimism and with summed lower scores showing pessimism, factor-analytic findings examining the structure of the LOT have shown that optimism and pessimism emerge as two distinguishable factors (Chang, D’Zurilla, & Maydeu-Olivares, 1994; Marshall, Wortman, Kusulas, Hervig, & Vickers, 1992). In accordance with these findings, the study used a bidimensional model (the optimism scale Cronbach’s alpha was .61 and the pessimism scale Cronbach’s alpha was .79).

Catanzaro and Mearns (1990) have developed the Negative Mood Regulation Scale (NMR), a 30-item questionnaire that measures generalized expectancies for alleviating negative moods. It includes expectancy statements
about coping behaviors (Catanzaro & Mearns, 1990). Participants are asked to indicate the extent to which they believe that the use of various coping strategies will modify their unspecific negative moods.

In order to assess specific negative mood regulation expectancies, a shorter, 9-item Likert scale was developed, designed to measure the degree to which participants expect that they can modify their specific emotions (e.g., *If I felt depressed, I believe I would find a way to feel better*). Specifically, participants were asked to indicate how much they agree with the statements in each item (1 = Strongly Disagree, 5 = Strongly Agree). Items are focused on the expectancy that one will be successful in the attempt to alleviate negative emotions. They were constructed to reflect expectancies regarding specific negative emotions that can be found in mood or anxiety disorders (e.g., panic, fear, despair, sadness), based on the *Diagnostic and Statistical Manual of Mental Disorders–IV* (American Psychiatric Association, 2000). The scale was reviewed and approved by a group of experts, specialized in clinical psychology. The total score on the scale was obtained by summing the score of individual items. Cronbach’s alpha was .81.

*Data Analysis*

As a first step in the data analysis, the study investigated possible relations between demographic variables, medical variables, optimism, pessimism, NMR expectancies and symptoms of anxiety and depression. Variables demonstrating a relation with symptoms of anxiety and depression were then entered into regression equations as predictors of emotional distress symptoms. Mediation analyses were performed for variables showing significant bivariate relations, in accordance with the published criteria (Baron & Kenny, 1986): (a) the predictor is associated with both the hypothesized mediator and the relevant outcome and (b) after controlling for the effects of the mediator, the relation between predictor and outcome is reduced. The conservative Sobel test was used to evaluate the indirect effect of the independent variable on the dependent one via the mediator (i.e. the “effect size” of the mediation).
**Results**

Univariate analysis indicated that the data did not violate the assumption of normality. Neither demographic (i.e., age, ethnicity, education, marital status) nor medical variables (i.e., type of the cancer or type of therapy) were significantly associated with patients’ anxiety or depression symptoms (all ps >.05) and therefore they were not included in subsequent analyses.

Bivariate correlations between optimism, pessimism, negative mood regulation expectancies and anxiety and depression symptoms are presented in Table 1.

Table 1. Correlations between variables taken into consideration

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<td>2. Optimism</td>
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<td>3. Pessimism</td>
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<td>-.25*</td>
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<td>4. Anxiety</td>
<td>-.61*</td>
<td>-.24</td>
<td>.44*</td>
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<td>5. Depression</td>
<td>-.52*</td>
<td>.02</td>
<td>.36*</td>
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*Note. *p < .05. N = 64 in all cases.

No relation was found between optimism and anxiety or depression symptoms, although pessimism was correlated with both of these negative mood states (p<.05). Negative mood regulation expectancies were related with symptoms of anxiety and depression. As predicted, negative mood regulation expectancies were also correlated with pessimism.

Pessimism and negative mood regulation expectancies, the two variables demonstrating significant bivariate relations (p<.05) with symptoms of anxiety and depression, were entered into two regression equations (one with anxiety symptoms as a dependent variable and the other with depression symptoms as dependent variable). The model accounted for 45% of the variance in patient anxiety symptoms ($R^2=.45; F(2, 61)=25; p<.01$). The model accounted for 32% of the variance in patient depression symptoms ($R^2=.32; F(2, 61)=14.39; p<.01$).

For variables showing significant bivariate relations consistent with mediation criteria (Baron & Kenny, 1986) mediation analyses were performed. The results are showed in Fig. 1 and Fig. 2.
Fig. 1. Mediational diagram for models testing the interrelations among pessimism, negative mood regulation expectancies and anxiety symptoms. All values are beta coefficients. Values in parentheses show relationships between pessimism and the dependent variable, when the mediating variable is included in the model; *p < .05. The value of the Sobel test for this mediation is 2.32 (p < .05).

Fig. 2. Mediational diagram for models testing the interrelations among pessimism, negative mood regulation expectancies and depression symptoms. All values are beta coefficients. Values in parentheses show relationships between pessimism and the dependent variable, when the mediating variable is included in the model; *p < .05. The value of the Sobel test for this mediation is 2.19 (p<.05).
Mediation analyses showed that negative mood regulation expectancies completely mediated the effects of pessimism on symptoms of depression and anxiety. The mediation was complete in both cases, and Sobel test computations showed it was significant. These results indicate that the impact of pessimism on emotional distress is completely mediated by negative mood regulation expectancies. The direct relation between negative mood regulation expectancies and emotional distress can be explained by conceptualizing these expectancies as specific beliefs within a response expectancy model (Kirsch, 1985).

Discussion and conclusions

In the last two decades there has been a growing interest in optimism and pessimism as cognitive factors that mediate the stress response but so far there are only a few studies that investigated the possibility that the effects of optimism and pessimism on distress are mediated by other variables (McGregor et al., 2004).

Consistent with the previous studies (Carver et al., 1993; Carver et al., 2005; Epping-Jordan et al., 1999; David et al., 2006; Stanton & Snider, 1993), our results revealed that pessimism was associated with symptoms of anxiety and depression.

An unexpected finding was that optimism was not significantly related to anxiety and depression symptoms or to negative mood regulation expectancies. These results are similar to those obtained by Whelen-Robinson, Kim, MacKallum and Kiecolt-Glaser (1997). They found that the pessimism scale of the LOT, but not the optimistically-worded items, predicted subsequent psychological and physical health for both stressed and non-stressed adults. The authors explained these results by suggesting that the beneficial effects of optimism found in the past could have been a function of a low level of pessimism rather than optimism, and the frequent use of the LOT scale as a one-dimensional measure might have concealed those effects (Whelen-Robinson et al., 1997).

Our results indicate a significant relationship between negative mood regulation expectancies and pessimism. More pessimistic cancer patients had a lower confidence in their ability to alleviate a negative mood state. Also, as predicted, patients that had a low confidence in their ability to modify negative moods had higher level of anxiety and depression symptoms.

These two factors alone, pessimism and NMR expectancies accounted for 45% of the variance in patients’ anxiety symptoms and for 32% of the variance in patients’ depression symptoms.

As hypothesized, the results of the mediation analyses showed that the impact of pessimism on emotional distress was entirely mediated by negative mood regulation expectancies. More pessimistic patients had a higher level of anxiety and depression symptoms because they had a low confidence in their
ability to alleviate these negative mood states, a result that fits the response expectancy model (Kirsch, 1985). There are authors who suggest that optimism and pessimism could be proximal causes for emotional distress (Chang, 1998). According to our findings, pessimism might function more as a distal cause of distress and negative mood regulation expectancies could function as a proximal cause for emotional distress, being self-confirming and sufficient to cause automatic emotional outcomes.

From a practical point of view, the results of this study point to the importance of psychological interventions aimed at modifying negative mood regulation expectancies in order to reduce emotional distress levels. Research has already supported the view that psychotherapeutic interventions that include a response expectancy change component reduce the level of negative affect (Schnur et al., 2009).

Numerous variables have been related with emotional distress in the psychological; nevertheless, many of these variables do not have an explicative value or a causal role, often being mediated by other variables (David, 2006; David, King, & Borkardt, 2001; David & Szentagotai, 2006). The results of this study support the idea that the effect of pessimism on symptoms of anxiety and depression is mediated by a specific type of response expectancies, namely, negative mood regulation expectancies.

Future research should focus on the relationship between negative mood regulation expectancies, as conceptualized by the response expectancy model, and other constructs from the social cognitive theory (Bandura, 1989; Bandura, 1994; Caprara et al., 2008), such as self efficacy in managing affect, which is defined as a belief in one’s ability to ameliorate a negative mood state. Such studies are of great utility because they can reduce the number of psychological constructs essentially covering the same psychological phenomenon.

This study has several limitations. First, only a small sample of women with breast or cervical cancer participated in the study; therefore, these results may not be generalized. The study should be replicated in more diverse, larger samples, in order to generalize the results beyond this particular sample of participants. Second, the study is a correlational, cross-sectional one. Future studies should determine whether changes in negative mood regulation expectancies lead to changes in distress levels.

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REFERENCES


Articles Section


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