AN ANALYSIS OF THE IMPACT OF IRRATIONAL BELIEFS AND ILLNESS REPRESENTATION IN PREDICTING DISTRESS IN CANCER AND TYPE II DIABETES PATIENTS

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ABSTRACT

The role played by psychological, social and cultural factors in health and illness related behaviors is no longer breaking news. Individual differences such as illness representation and irrational beliefs have been shown to contribute to variability in distress when confronted with stressful events or certain illnesses. However, the relationship among these characteristics is not well established. Moreover, there is considerable lack of research concerning the impact of specific irrational beliefs in mediating the relationship between general irrational beliefs and distress. The purpose of this study was to investigate the interrelations among illness representation, general and specific irrational beliefs and distress levels in type two diabetes and breast cancer patients. The illness representation of 56 patients (30 breast cancer patients and 26 diabetes patients) was evaluated with semi-structured interviews; subsequently, they completed the Beck Depression Inventory, State Trait Anxiety Inventory X1 and X2, Profile of Mood States, Attitudes and Beliefs Scale II and an adapted version of the ABS II for illness. Results revealed that specific illness-related irrational beliefs mediate the relationship between general irrational beliefs and emotional distress (p<0.05). Results also revealed no significant differences between levels of distress for different representations of illness.

KEYWORDS: illness representation, general and specific irrational beliefs, distress, diabetes and cancer patients.

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INTRODUCTION

In attempting to understand the variation of individual responses to illness and health, research has focused on different theoretical approaches trying to explain the relationship between various biological, social and psychological aspects of health, illness and health care. In recent years, social cognition models and cognitive behavioral approaches to illness and health have dominated most of the research and practice in this field. In concordance with mainstream literature, several theoretical assumptions guiding our research are briefly presented.

Cognitive-behavioral approach to illness and health

According to one of the main principles of cognitive behavioral therapy (CBT), all human beings must be analyzed at for distinct levels: cognitive, behavioral, biological and subjective. The cognitive level refers to information content and processing which gives the quality of our subjective level. The behavioral level generally refers to operant behaviors, which are mainly learned motor behaviors under voluntary control. The biological level indicates all modifications taking place in our body at anatomical and physiological level; the modifications of the autonomic nervous system are responsible for the intensity of our subjective state. The subjective level refers to the emotional states generally indicated by various verbal labels. The interactions among these levels explain and produce mental, physical, and psychosomatic disorders on one side and normal functioning of the human being on the other side (David, 2000). For example, the interaction among the environment, internal stimuli and our cognitive structures or information processing can determine a negative subjective state.

The role of cognitions in predisposing, causing, and maintaining emotional disturbance has lead to the development of various treatment theories and practices designed to alter cognitions hypothesized to be pathogenic (Olioff, Bryson, & Wadden, 1989).

Over the last decades, several hundred papers have been published focusing on cognitive models of psychopathology; Rational Emotive Behavior Therapy (REBT), the first form of CBT, has particularly paid attention to the way people’s descriptions and interpretations of life events lead to the way they feel (the subjective level) and act (the behavioral level).

REBT is based on Albert Ellis’ ABCDE model of emotional distress (Ellis, 1962); according to this model, people experience various activating events (A) about which they have adaptive (rational/functional) or maladaptive (irrational/dysfunctional) beliefs (B). These beliefs lead to emotional, behavioral, cognitive and psychophysiological consequences (C). Rational beliefs lead to functional consequences while irrational beliefs lead to dysfunctional consequences. Clients engaged in REBT are encouraged to dispute (D) their irrational beliefs and to assimilate more efficient (E), adaptive rational beliefs.
which will lead to a positive impact on their emotional, cognitive, and behavioral responses (Ellis, 1962, 1994; Wallen, DiGiuseppe, & Dryden, 1992).

There is solid evidence that cognitive-behavioral approaches are among the best empirically supported, in terms of theory, conceptual understanding and intervention, for a wide variety of emotional (David & Szentagotai, 2006) and somatic disorders (Grossman & Hughes, 1992).

Theoretical aspects of illness representation

In recent years, health psychologists have shown that, in order to make sense and respond to health problems, patients tend to create their own models or representations of their illness. The most influential theoretical framework adopted in this area of research is the self regulation model. According to the Self-Regulation Theory (Leventhal, Nerenz, & Steele, 1984), patients elaborate common sense representations of their illness which influence their emotional, behavioral and cognitive reactions towards their illness. One’s illness representation will influence his or her coping strategies and reactions and will lead to a particular experience of the illness, while others may experience the same illness quite differently. That is, they react to the cognitive representation they have about a certain situation and not to the situation itself. Leventhal and colleagues suggest that patients form ideas about their illness around five representation dimensions (Kaptein & Weinman, 2004). Identity is concerned with patients’ ideas about the label or diagnosis given to their condition and the symptoms associated with it. The cause component reflects the patient’s ideas about the likely cause of their condition (for example, stress, virus, genetic inheritance). Timeline indicates the perception of the likely duration of their health problems (for example, acute, chronic or cyclical). Consequences comprise the individual’s belief about illness severity and its likely impact upon psychological, social, physical and economic functioning. The cure/control component indicates the extent to which the patient believes his or her condition is curable or at least controllable. Although the components of illness representation are distinct in the sense they can have specific effects on outcomes, they are not necessarily independent.

In view of the interest in patients’ representations of illness and the growing empirical support of cognitive-behavioral therapies (mainly REBT), both in attempting to better understand the nature of illness-related distress and to develop interventions aiming to facilitate the control of emotional distress in chronic illness, we developed a study aiming to investigate the representation of illness and the irrational beliefs (both in general and in particular towards their illness) of chronic illness patients and to assess the current level of their emotional distress. In addition, a specific objective was to investigate the impact of irrational beliefs and illness representation in predicting emotional distress in cancer and type II diabetes.
Our prediction was that there are no significant differences between mammary neoplasm and type II diabetes patients, when comparing their level of depression, anxiety, and distress. Also, we predicted no significant differences between patients regarding their irrational beliefs and their illness representation. We predicted however that illness related irrational beliefs better predict emotional distress than illness representation, in the sense that they mediate the relationship between general irrational beliefs and emotional distress while illness representations do not account for differences of the distress levels among patients.

METHOD

Participants

The sample consisted of 30 patients hospitalized at the Oncological Institute and 26 patients hospitalized at the Center of Diabetes and Nutritional Diseases from Cluj-Napoca from January 2005 until April 2005. All patients from the Oncological Institute were diagnosed with mammary neoplasm and had been hospitalized for radiation therapy. All patients from the Center of Diabetes and Nutritional Diseases were diagnosed with type II diabetes and were in the hospital for their periodical analysis or their first analysis after being diagnosed.

All mammary neoplasm patients were female; 57.7% of patients had second stage mammary neoplasm, 38.6% had third stage and 3.8% first and fourth stage. From the diabetes patients, 43% were male and 57% were female. The age of the patients ranged from 24 to 72 years with a mean of 53.9. Patient’s education level ranged from secondary school (25%), vocational school (25%), high school (25%), and university (25%) according to the Romanian school system. Of the sample participants, 87% lived in urban areas while 13% of them lived in rural areas. Regarding their marital status, 79.6% of patients were married, 7.4% were divorced, 11.1% were widowed and 1.9% were single. In terms of religion, 74.5% were Orthodox, 5.9% Roman Catholic, 2% Greek Catholic, and 17.6% were Jehovah’s witnesses, Baptists or Pentecostals. For 37.3% of the patients, religion was extremely important, 25.5% rated religion as pretty important, 27.5% as medium as importance while 7.8% rated religion as not very important and 2% not important at all.

According to variance analyses, patient characteristics did not differ significantly between groups, except for gender: while the vast majority of respondents were female, the sample reflects the gender bias evident for mammary neoplasm.

Procedure

Patients participated at this study voluntarily. The study was presented as an evaluation of the way people perceive their illness and the way they think and feel about it. Except for the cases where patients could not walk, interviews took place in the hospital’s library. All study measures were administered individually,
after the interview. All patients gave written informed consent before the interview. At the beginning of the interview, every patient was reminded that he or she can interrupt the interview any time he or she no longer feels comfortable. The interviews began with several introductory questions. Each following question was formulated so that patients can answer regardless of their education or their prior knowledge about their illness. In trying to preserve the discussion as natural as possible, the order of the questions varied to some extent between patients. Periodically, in order to conclude or introduce a new theme in the interview, recapitulative and structuring questions were formulated. Interviews lasted between 30 and 50 minutes, with a mean of 40 minutes, and were recorded with patients’ agreement. All interviews were transcribed totaling 500 pages. After the interviews, self-report measures were handed in, in a random order. The completion of measures took about 30 minutes for each patient.

Measures

All subjects filled in self-report measures evaluating mood states and cognitions. In addition, patients participated in semi-structured interview aiming to assess the representation patients had about their illness.

The Profile of Mood States (POMS) (Shacham, 1983). The Profile of Mood States is aimed at assessing mood states. The scale consists of five scales which assess negative mood states (anxiety, depression, anger, fatigue and confusion) and one scale which assesses positive mood states (vigor/energy). The 47 items are grouped into six subscales: Tension-Anxiety, Depression-Dejection, Anger-Hostility, Vigor-Activity, Fatigue-Inertia, and Confusion-Bewilderment. The scores from each of the above scales can be interpreted separately or they can be summed up in a total distress score. In this study we used the total score of distress. High scores on POMS reflect a high level of distress. Internal consistency (.90) and test-retest reliability (with values ranging between .65 and .74) indicate good psychometric properties.

The State Trait Anxiety Inventory (STAI X1, X2) (Spielberger et al, 1983). The State Trait Anxiety Inventory (STAI) consists of two self-assessment scales which measure two separate concepts related to anxiety: anxiety as state (STAI X1) and anxiety as trait (STAI X2). STAI X2 includes 20 descriptive statements based on which individuals express the way they feel in general. Anxiety as trait refers to relatively stable individual differences manifested in the tendency to react to situations perceived as threatening with an increase in state anxiety. STAI X1 includes 20 descriptive statements and the participants are asked to indicate the way they feel at a certain time; for this study all participants were asked to rate the way they felt during the past few days. Higher total scores indicate more severe anxious symptoms. The Romanian version of the STAI X1 and X2 has adequate psychometric properties.

The Beck Depression Inventory (BDI) (Beck et al., 1979). This is a 21-item self-report inventory measuring current characteristic symptoms of depression
(e.g., sadness, fatigue, social withdrawal, irritability, hopelessness etc.). Higher total scores indicate more severe depressive symptoms. The Romanian version of the BDI has very good psychometric properties and has been proven to be sensitive in screenings and clinical change assessments.

The Attitude and Beliefs Scale II (ABS-II) (DiGiuseppe, Leaf, Exner, & Robin, 1988). The ABS-II is a 72 self-report scale, designed to measure irrational beliefs. The scale has three components: (1) cognitive processes (demandingness, awfulizing, self-downing and low frustration tolerance); (2) content (approval, achievement, and comfort), and (3) wording modality (rational or irrational terms). The scale allows for the assessment of the four irrational and rational beliefs and of the global score of rationality and irrationality. ABS-II has been shown to be a reliable and valid measure of both rational and irrational beliefs.

Attitudes and Beliefs Scale, Short form (ABSs) (David, 2007). For this study, we adapted the ABSs in order to evaluate rational and irrational beliefs towards one’s particular illness. The ABSs is a self-reported instrument consisting of 8 items measuring four irrational beliefs (demandingness, awfulizing, self-downing and low frustration tolerance) and their rational alternatives. The scale allows for the assessment of the global score of irrationality. ABSs has very good psychometric properties for both the American and Romanian population. For this study, 5 experts were asked to rephrase all 8 items so that they reflect rational/irrational beliefs towards one’s illness. Based on their suggestions, we elaborated a preliminary form of the scale which was given to other 5 experts whose task was to identify each rational/irrational belief suggested by each item. All rational and irrational beliefs were correctly identified by each expert. The adapted form of the ABSs was used as a measure for illness related irrational beliefs.

Semi-structured interview. Until recently, illness representations have been evaluated with semi-structured interviews. After Weinman and his collaborators elaborated the Illness Perception Questionnaire in 1996 (Weinman et al., 1996), most research dealing with illness representation adopted a quantitative methodology. In our research, we chose to use semi-structured interviews because, one of our previous pilot studies indicated that the Illness Perception Questionnaire, in its original version, is not fully adequate to the Romanian socio-cultural environment. Our interview included questions derived from illness representation theory and research. Questions were formulated, and rephrased or taken again if necessary, in such manner that they would ensure complete understanding for all participants and they would encourage participants to describe their understanding and experience of their illness. The interview was concentrated on the five components that have been found to underlie the perception of illness: (1) the identity component (e.g., Why are you hospitalized? What has been bothering you these last few days? What has been bothering you since you were diagnosed with your illness?); (2) the cause component (e.g., What do you believe to be the cause of your illness? Where does your illness come from?); (3) the timeline component (e.g., What time has the illness started?); (4) the consequences component (e.g., What consequences do you think your illness has brought upon your life?); (5) the control component (e.g., What do you think you can control about your illness? How do you think you can control your illness?).
from?); (3) the time-line component (e.g., How long do you think your illness lasts?); the consequences component (e.g., What consequences does your illness have in your life? How do you think your life is going to be during the next months or years?); (5) the treatment and control component (e.g., What do you think will be the course of your illness? Can your illness be treated or cured? To what extend do you believe you can influence the course of your illness? What exactly can you do?)

Analysis

As a prerequisite for mediation analyses, the first step in data analysis was correlational analyses. Mediational analyses were then performed according to the algorithm described by Baron and Kenny (1986). Specifically, results are consistent with a mediation model if (1) the predictor is associated with both the hypothesized mediator and the relevant outcome; (2) the hypothesized mediator is correlated with the outcome; and (3) after controlling for the effects of the mediator, the relation between predictor and outcome is reduced.

The direction of mediation was determined by relative changes in the parameter estimates. An alpha level of .05 was used for all statistical analysis.

In order to evaluate patients’ perception of illness, semi-structured interviews were used and thematic analysis was performed afterwards.

RESULTS

The level of depression, anxiety, distress and rationality/irrationality was assessed. Since results indicated no significant differences between cancer and type II diabetes when compared for these variables, groups were combined for statistical analysis. Means and standard deviations are presented in Table 1.

<p>| Table 1 |
|-----------------|-----------------|
| <strong>Means and standard deviations on depression, distress, anxiety and irrationality measures</strong> |</p>
<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDI</td>
<td>13.2</td>
<td>9.6</td>
</tr>
<tr>
<td>POMS</td>
<td>60</td>
<td>34.5</td>
</tr>
<tr>
<td>STAI X1</td>
<td>42</td>
<td>12.2</td>
</tr>
<tr>
<td>STAI X2</td>
<td>41.5</td>
<td>10.2</td>
</tr>
<tr>
<td>ABS II</td>
<td>58.2</td>
<td>39.2</td>
</tr>
<tr>
<td>ABS s</td>
<td>5.8</td>
<td>5.2</td>
</tr>
</tbody>
</table>
Bivariate correlations among variables were computed. Results are presented in Table 2.

Table 2
Correlations of variables included in the model

<table>
<thead>
<tr>
<th></th>
<th>BDI</th>
<th>POMS</th>
<th>STAI X1</th>
<th>STAI X2</th>
<th>ABS s</th>
<th>ABS II</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDI</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POMS</td>
<td>.790*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAI X1</td>
<td>.754*</td>
<td>.833*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAI X2</td>
<td>.667*</td>
<td>.677*</td>
<td>.667*</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABS s</td>
<td>.597*</td>
<td>.600*</td>
<td>.482*</td>
<td>.519*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>ABS II</td>
<td>.347*</td>
<td>.303*</td>
<td>.115(NS)</td>
<td>.412*</td>
<td>.522*</td>
<td>-</td>
</tr>
</tbody>
</table>

* p< 0.05
(NS) Non Significant

Most correlations are positive and significant (p<0.05). Dependent variables (depression, state and trait anxiety, distress) are positively and significantly correlated (p<0.05); the hypothesized mediator (illness related irrational beliefs) is positively and significantly correlated (p<0.05) both with dependent variables and the independent variable (irrational beliefs); the independent variable is correlated with all dependent variables, except for the state anxiety.

Further on, the mediation model of the relationship between irrational beliefs, illness related irrational beliefs and depression, distress and trait anxiety was analyzed (state anxiety was excluded from further analysis since a correlation with the independent variable, a necessary prerequisite for mediation analyses, was not identified).

According to the Baron and Kenny recommendations (1986), in order to test for mediation, we estimated three regression equations: first, we regressed the mediator (MV) on the independent variable (IV); second, we regressed the dependent variable (DV) on the independent variable (IV); and third, we regressed the dependent variable (DV) on both the independent variable (IV) and on the mediator (MV). Separate coefficients for each equation were estimated and tested.

Coefficients for each equation are presented below.
Table 3
*Regression equations in testing mediation for depression*

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>MV – criterion</td>
<td>DV – criterion</td>
<td>DV – criterion</td>
</tr>
<tr>
<td>IV - predictor</td>
<td>IV - predictor</td>
<td>IV, MV -predictors</td>
</tr>
<tr>
<td>F</td>
<td>19.43 (p&lt;0.05)</td>
<td>7.09 (p&lt;0.05)</td>
</tr>
<tr>
<td>Beta</td>
<td>.52 (p&lt;0.05)</td>
<td>.34 (p&lt;0.05)</td>
</tr>
<tr>
<td>T</td>
<td>4.40 (p&lt;0.05)</td>
<td>2.66 (p&lt;0.05)</td>
</tr>
<tr>
<td>R²</td>
<td>.27</td>
<td>.12</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.25</td>
<td>.10</td>
</tr>
</tbody>
</table>

Table 4
*Regression equations in testing mediation for distress*

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>MV – criterion</td>
<td>DV – criterion</td>
<td>DV – criterion</td>
</tr>
<tr>
<td>IV - predictor</td>
<td>IV - predictor</td>
<td>IV, MV -predictors</td>
</tr>
<tr>
<td>F</td>
<td>19.43 (p&lt;0.05)</td>
<td>5.27 (p&lt;0.05)</td>
</tr>
<tr>
<td>Beta</td>
<td>.52 (p&lt;0.05)</td>
<td>.30 (p&lt;0.05)</td>
</tr>
<tr>
<td>T</td>
<td>4.40 (p&lt;0.05)</td>
<td>2.29 (p&lt;0.05)</td>
</tr>
<tr>
<td>R²</td>
<td>.27</td>
<td>.09</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.25</td>
<td>.07</td>
</tr>
</tbody>
</table>
Table 5
Regression equations in testing mediation for trait anxiety

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>MV – criterion</td>
<td>IV - predictor</td>
<td>IV - predictor</td>
</tr>
<tr>
<td>F</td>
<td>19.43 (p&lt;0.05)</td>
<td>10.40 (p&lt;0.05)</td>
</tr>
<tr>
<td>Beta</td>
<td>.52 (p&lt;0.05)</td>
<td>0.41 (p&lt;0.05)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>4.40 (p&lt;0.05)</td>
<td>3.22 (p&lt;0.05)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.27</td>
<td>.16</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.25</td>
<td>.15</td>
</tr>
</tbody>
</table>

After estimating all regression equations we tested the mediation effect of illness related irrational beliefs (if associated with irrational beliefs) on depression, distress and trait anxiety and found, in all cases, total mediation.

Mediational analyses were therefore consistent with the hypothesis that illness related irrational beliefs completely mediate the effects of irrational beliefs on distress, depression and anxiety.

In order to evaluate patients’ perception of illness we used semi-structured interviews. Using thematic analysis (Green et al., 2004), we identified common themes patients have regarding the cause, timeline, consequences, treatment and control over the illness.

The major themes and sub-themes identified are:

**Cause:** stress, hormonal factors, hereditary factors, divine influence, physical trauma, alimentation, pollution, unknown.

**Timeline:** permanent, precise, unknown.

**Treatment:** treatable, not treatable, unknown.

**Control:** strong health, diet, rest, prayers, treatment.

**Consequences:** on activities, emotions, social activities, general health, no consequences.

Once identified, theme frequency was computed. For the identity, control and consequences components the total number of symptoms, control factors and consequences was computed. For the cause, timeline and treatment components, nominal categories were established. Moreover, using quantitative parameters of
Identity. As far as the identity component is concerned, two main aspects were analyzed: whether the patient knows his or her diagnosis (the name, the label) and if he or she can list several symptoms of their illness (if any). The diagnosis was appreciated as known or unknown by the patients. Analyses indicate that all patients know the name of their diagnosis. The total number of symptoms associated with the illness was then computed. 93.3% of the patients from the cancer sample said that their illness has no symptoms; the mean number of symptoms for the diabetes sample is 3.11 (SD=2.5) – 27% of the patients listed two symptoms, 20% of them listed three and 8% listed six symptoms. There are no differences in the number of symptoms associated with various perceived causes of the illness.

Cause. 20% of the cancer patients believe that the cause for their illness is stress, 13.3% of them attribute the cause to hormonal factors, 10% to hereditary factors, 20% to divinity punishment, 13.3% to a physical trauma, 3.3% to unhealthy diet, 16.7% to pollution and 3.3% don’t know what could be the cause of their illness. For the diabetes patients, percentages are much different: 73.1% of them think they have diabetes because of stress, 7.7% of them think their illness is caused by hereditary factors, 7.7% attribute the cause to their diet, 3.8% to pollution and 7.7% of them don’t know what is the cause of their illness. The perceived cause of the illness is not associated with any of the illness representation components. Moreover, there are no differences of the level of depression, anxiety or distress among the perceived causes of the illness.

Timeline. 53.3% of the cancer patients think their illness is permanent, 23.3% of them think their illness will be treated in a precise period of time (months or years) and 23% of them don’t know how long their illness is going to last; 88.8% of the diabetes patients think their illness is permanent, 7% think their illness will be treated in a precise period of time (months or years) and 3.8% of them don’t know how long their illness is going be. There are no significant differences of the level of depression, anxiety and distress for different timeline perceptions of both cancer and diabetes.

Treatment. 53.3% of the cancer patients think their illness cannot be treated while 43.3% of them think there is a treatment for their illness; only 3.3% don’t know if their illness can be treated or not. Percentages for diabetes patients are identical with those expressed for the timeline component. We didn’t find differences between the level of depression, anxiety and distress for any of the treatment variables.

Control. When asked if they personally can influence the course of their illness, 93.3% of the cancer patients and all diabetes patients think they can control the evolution and the course of their illness. 54% of the diabetes patients and 74% of the cancer patients think that „positive thinking” and „ambition” are decisive for the illness evolution; 80% of the cancer patients and 100% of the diabetes patients...
think diet has a major role in the evolution of their illness; 53% of the cancer patients and 46% of the diabetes patients think that exercise can improve the course of their illness; 47% of the cancer patients and 42% of the diabetes patients believe prayers and fasts can influence the evolution of their illness; when asked about the treatment they are undertaking, 60% of the cancer patients and 96% of the diabetes patients say treatment will contribute to the evolution of their illness. Results didn’t indicate differences between cancer and diabetes patients or significant relationships between control and other illness representation components and neither with the level of depression, anxiety and distress.

Consequences. The main consequences reported were health, current activities, interactions with others and emotions. 46.7% of the cancer patients report consequences of their illness on their current activities, while only 34% of the diabetes patients reported this consequence. 26.7% of the cancer patients and 11.5% of the diabetes patients feel their illness has consequences in their interactions with the others. 10% of the cancer patients and 73.3% of the diabetes patients feel their general health was affected by their illness. A significant difference between the two groups is that only cancer patients (17%) reported benefic consequences of their illness.

DISCUSSION AND CONCLUSIONS

As previously mentioned, our objective was to both evaluate emotions and cognitions in cancer and diabetes and to clarify some key aspects of the relationship between them. We predicted that illness related irrational beliefs better predict emotional distress than illness representation, in the sense that they mediate the relationship between general irrational beliefs and emotional distress while illness representations do not account for differences of the distress levels among patients.

We therefore assessed the level of depression, anxiety and distress in cancer and diabetes patients; we also assessed general and specific irrational beliefs and patients’ illness representations.

Results indicated that distributions did not violate assumptions of normality for the levels of depression, anxiety and distress, both for cancer and diabetes patients. Similarly to other studies (Lovejoy & Metteis, 1996; Derogatis et al., 1983), we found that the emotional response to cancer and diabetes has a high variance. Normal distributions were also found for general and specific rationality/irrationality.

Data indicated no significant differences between cancer and diabetes patients when depression, anxiety and distress were compared. Also, no significant differences were found as far as rationality and irrationality were concerned.

The correlations identified between depression, anxiety and distress on the one hand and irrationality on the other hand are concordant with the literature. Of
interest is the relationship between irrational beliefs in general and specific irrational beliefs (related to illness). One of our objectives was particularly the study of specific irrational beliefs as a possible mediator between general irrational beliefs and emotional response (depression, anxiety, distress). The mediation analysis indicated a total mediation of these variables; in other words, the impact of irrational beliefs on depression, anxiety and distress is completely mediated by irrational beliefs about one’s illness. That is, a patient’s distress is associated with irrational beliefs but is significantly better predicted by irrational beliefs about his or her illness.

Another objective of our study was the assessment of patients’ illness representations (the way they perceive the identity, the cause, the timeline, the treatment and the consequences of their illness) and the relationship between these representations and emotional response.

Whereas the perceived cause is concerned, there were several differences between cancer and diabetes patients worth mentioning: stress is more frequently perceived as a cause of diabetes while God’s will and hormonal factors are more often perceived as causes of cancer. No differences were however identified when asked about the control over the illness or the consequences associated with the illness.

Although several differences were identified between the illness representations of cancer and diabetes patients, no differences between depression, anxiety and distress levels were identified. A possible interpretation of these results could be that illness representation has a reduced or no effect on the emotional response. It is however possible that, although different, illness representations may lead to similar emotional response. Additional studies are necessary to clarify these aspects.

The findings of the current study are consistent with existing research and provide important information regarding the relationship between irrational beliefs (general and specific), illness representation and emotional distress. One of the main theoretical implications of this study could be that general irrational beliefs may favor the appearance of specific irrational beliefs (which are activated when confronted with stressful events), beliefs that will mediate their impact on emotional response. Another aspect worth mentioning is that our results indicate that irrational beliefs (both general and specific) are associated with emotional distress, while illness representations are not. This seems to indicate that irrational beliefs (referred as hot cognitions within the conceptual framework of the appraisal theory – they indicate the way people process and evaluate cold cognitions) (Abelson & Rosenberg, 1965; Lazarus, 1991; Smith & Lazarus, 1993) produce emotions while illness representations (cold cognitions – they refer to the way people develop representations of relevant circumstances) are not sufficient to produce emotions since do not imply any form of evaluation (Lazarus, 1991; Smith & Lazarus, 1993; David & Szentagotai, 2006). This means that hot cognitions (general or specific irrational beliefs) and the distress they produce are relevant.
indicators of how cold cognitions (e.g., illness representation) are processed in terms of their relevance for personal well-being.

Among the limitations of our study, several are worth mentioning: the patients investigated may not be representative for the cancer or type II diabetes population at large; also, the small size of the samples included in this study may be responsible for some of the results. However, despite these limitations, our study has several innovative aspects; to our knowledge, this is the first articulated research investigating simultaneously the impact of illness representation and irrational beliefs in predicting distress in cancer and type II diabetes patients.

REFERENCES


