Illness Perceptions, Illness-related Problems, Subjective Health and the Role of Perceived Primal Threat: Preliminary Findings
Evangelos C. Karademas, Argyro Bakouli, Anastasios Bastounis, Fani Kallergi, Panagiota Tamtami and Maria Theofilou

_J Health Psychol_ 2008; 13; 1021
DOI: 10.1177/1359105308097967

The online version of this article can be found at:
http://hpq.sagepub.com/cgi/content/abstract/13/8/1021

Published by:
[SAGE](http://www.sagepublications.com)

Additional services and information for _Journal of Health Psychology_ can be found at:

**Email Alerts:** [http://hpq.sagepub.com/cgi/alerts](http://hpq.sagepub.com/cgi/alerts)

**Subscriptions:** [http://hpq.sagepub.com/subscriptions](http://hpq.sagepub.com/subscriptions)

**Reprints:** [http://www.sagepub.com/journalsReprints.nav](http://www.sagepub.com/journalsReprints.nav)

**Permissions:** [http://www.sagepub.co.uk/journalsPermissions.nav](http://www.sagepub.co.uk/journalsPermissions.nav)

**Citations** [http://hpq.sagepub.com/cgi/content/refs/13/8/1021](http://hpq.sagepub.com/cgi/content/refs/13/8/1021)
Illness Perceptions, Illness-related Problems, Subjective Health and the Role of Perceived Primal Threat

Preliminary Findings

EVANGELOS C. KARADEMAS, ARGYRO BAKOULI, ANASTASIOS BASTOUNIS, FANI KALLERGI, PANAGIOTA TAMTAMI, & MARIA THEOFILOU

University of Crete, Greece

Abstract

Many theories suggest that a threatening situation impacts health because it affects core needs. Our assumption was that a set of interdependent ‘perceived primal threats’ to basic human needs (self-preservation, social integration, personal identity and growth, and positive worldview), which result from the presence of a disease, are related to illness perceptions and subjective health. Participants were 121 chronic medical patients. According to the results, perceived primal threat was strongly associated with illness-related perceptions and problems, as well as perceived psychological and overall self-rated health. Also, perceived primal threat mediated the relationship between illness-related factors and subjective health measures.

Keywords

- illness perceptions
- perceived primal threat
- subjective health

COMPETING INTERESTS: None declared.

ADDRESS. Correspondence should be directed to:

EVANGELOS C. KARADEMAS. Department of Psychology, University of Crete, 74100, Gallos, Rethymnon, Greece. [Tel. + 30 28310 77532; Fax + 30 28310 77578; email]
PERCEIVED threat is a significant cognitive antecedent of fear and various psychological difficulties. Several researchers (e.g., Beck & Clark, 1997; Taylor, 1983) argue that evaluations about threat are at the core of stress reactions. Thus, a threatening situation impacts functioning and health because it affects core needs or beliefs. Within this context, the purpose of the present study was to define the core threats that a chronic illness may represent and examine their relation to subjective health.

Defining core threats to personal well-being

Although many situations can trigger negative emotions, it is only those threatening a major need or goal that may cause a significant reaction (Beck & Clark, 1997; Lazarus, 1999). Several theories have tried to define these ‘basic needs’.

Maslow (1943) was one of the first to believe that humans have fundamental and genetic in origin needs, with the need for survival being the first. Also, the Terror Management Theory (TMT; Becker, 1975) supports that self-preservation is the most essential human goal: death is the core threat for all humans, who have developed culture and self-esteem to control it. Several studies have provided support to this theory (Arndt, Routledge, Cox, & Goldenberg, 2005). Other theorists support that preservation of the social self or social status is of great importance (e.g., Baumeister & Leary, 1995). Evidence exists that the motive to preserve social status is associated with the ability to function, access to resources and survival (Dickerson & Kemeny, 2004; Fiske, 1992). In addition, the significance of worldview for human functioning has frequently been underlined. A strong worldview is related to positive emotions, whereas threats to worldview increase the sense of vulnerability and provoke negative emotions (Fiske, 2004; Major, Kaiser, O’Brien, & McCoy, 2007).

Some researchers have combined theories in order to describe basic human needs. Hart, Shaver and Goldenberg (2005) combined the TMT and the attachment theory to suggest that close relationships, self-esteem and cultural belief systems are the means for boosting the sense of security and buffering fear. Also, Ryan and Deci (2000) proposed another tripartite model of innate psychological needs: competence; autonomy; and relatedness.

The inspection of the above mentioned theories and research reveals a four-component set of basic human needs: self-preservation; social integration; personal identity and growth; and worldview. Self-preservation can be defined as the sense of safety and physical integrity, or the will for survival; social integration refers to relatedness to others and to social status; personal identity and growth refers to perceptions about personal abilities, characteristics and potential growth; finally, worldview reflects the assumptions regarding reality and the world (Dickerson & Kemeny, 2004; Fiske, 2004; Ryan & Deci, 2000). We assume these needs to be fundamental and, therefore, we will be referring to these as ‘primal needs’ and to relevant threats as ‘perceived primal threats’.

Although certain theorists (e.g., Becker, 1975) presume that only threats to self-preservation are basic, we believe that all perceived primal threats are almost equally important and strongly interdependent. For instance, the view of the world is imbued in the perceptions of self and safety (for an example, see Marshall et al., 2007). Therefore, it would be better to refer to an integrated concept of perceived primal threat (with four aspects), instead of diverse threats.

Perceived primal threat, health and illness

Each aspect of perceived primal threat has already been related to well-being. There is evidence suggesting that threats against survival—safety or against social integration are associated with cognitive-emotional reactions, such as fear and depression, as well as with intense biological reactions (Fiske, 1992; Sapolsky, Romero, & Munck, 2000). Furthermore, several studies have shown that the ways a person perceives self and personal goals are connected to survival, health and behaviour (Carmel, Baron-Epel, & Shemy, 2007; Hagger, Anderson, Kyriakaki, & Darkings, 2007), while worldview is an essential aspect of human behaviour affecting cognition, emotion and well-being (Koltko-Rivera, 2004). In other words, ‘perceived primal threat’ seems to act as a mediator between self and world (or situation)—related perceptions, and well-being. The problems resulting from a negative situation and the associated negative evaluations may trigger a perception of primal threat, which in turn sets in motion processes that could eventually affect functioning and health.
A situation that has the potential to generate a perception of primal threat is ill-health. Illnesses are major stressful situations that endanger life, functioning, relationships, goals and beliefs (Stewart, Ross, & Hartley, 2004). Besides the problems imposed by illness, a critical aspect regarding adjustment is the perceptions patients hold about illness (Hagger & Orbell, 2003). Illness perceptions refer to personal evaluations about the illness, and they may guide further appraisals regarding disease and self (Nerenz & Leventhal, 1983). Thus, negative illness perceptions, as well as the problems resulting from illness, could activate a perception of primal threat.

The present study

This study is a preliminary examination of the association between perceived ‘primal threats’ resulting from a chronic illness, and illness-related problems, illness perceptions and subjective health. To achieve this, a secondary aim was the construction of a new questionnaire to assess perceived primal threat. The basic assumption was that the experience of illness is related to perceived primal threat, which in turn is associated with subjective health. Our specific hypotheses were: (a) illness-related problems, as assessed by a health-related quality of life measure, are associated with higher levels of perceived primal threat; (b) illness perceptions are related to perceived primal threat; (c) higher perceived primal threat is related to worst subjective health (as assessed by psychological symptoms and self-rated health), even after controlling for demographic variables and illness-related factors; (d) perceived primal threat mediates the relation between illness-related factors and subjective health measures.

Method

Participants and procedure

Participants were chronically ill outpatients visiting the facilities of two major general hospitals for a scheduled appointment. All visitors to these facilities during the study period (four days) were invited by the researchers to participate in a study regarding ‘adaptation to chronic conditions’. Patients over 70 years of age, as well as those who were facing severe communication difficulties were excluded from the study. Almost 65 per cent of the outpatients agreed to participate and they completed a series of questionnaires before entering the physician’s office. There were no significant differences concerning gender, age and type of disease between those who agreed to participate and those who refused. The final sample consisted of 121 outpatients, 45 males and 76 females. Their mean age was 49.87 years (SD = 14.23). The majority was suffering from a cardiovascular problem (33.05%), or from a physical disability accompanied with chronic pain (35.54%). Some were suffering from cancer-related problems and difficulties (14.05%), while the remainder (17.36%) reported an array of chronic problems. The mean time elapsed since first diagnosis was 11.23 years (SD = 8.13). Regarding marital status, 58.7 per cent were married, 18.2 per cent were divorced or windowed and 23.1 per cent were single.

Measures

Perceived Primal threat

Illness-related perceived primal threat was measured with a questionnaire developed for the purposes of this study. It consisted of eight items. Two were referring to self-preservation (Your health condition: 1. threatens your life and safety; 2. …threatens the means of your sustenance); two items were about social integration (3. …endangers your relationships with close persons; 4. …endangers your social status in general); two were about personal identity and growth (5. …threatens your personal characteristics; 6. …threatens your plans and expectations); finally, two items were referring to personal worldview (7. …affects your beliefs about the world; 8. …affects the ways you perceive your existence in the world). Prior to the study, the Perceived Primal Threat Scale was administered to a small group of 20 patients to ensure that it is easy to answer. Participants were asked to respond to each item by using a Likert-type scale ranging from 1 (not agree at all) to 7 (agree a lot). A confirmatory factor analysis was performed to test the structure of the scale. Results are presented below.

Health-related quality of life

Health-related quality of life, as an indicator of illness-related problems, were assessed with the EQ-5D (Szende & Williams, 2004), which measures quality of life on five dimensions (mobility, self-care, usual activities, pain/discomfort and anxiety/depression). Participants were asked to indicate whether they had no, some or many problems (levels 1–3) concerning the five areas described above. The data on
the five dimensions are not continuous but ordinal. However, because the number of persons reporting severe problems is usually very small, the sum of the reported levels two and three is frequently used (Szende & Williams, 2004). Dimension five was not used in this study, since psychological symptoms were measured with another scale.

**Illness perceptions** Illness perceptions were measured with the Brief Illness Perception Questionnaire (Brief IPQ) (Broadbent, Petrie, Main, & Weinman, 2006), which aims to be a very short and simple measure of illness perceptions. It uses a single-item approach to assess perceptions on a continuous scale ranging from 0 to 10. It consists of eight items assessing consequences, timeline, personal control, treatment control, identity, illness comprehensibility, concern and emotions. The two latter items, which assess emotional perceptions, were not used in this study, as a different scale was used to measure psychological symptoms.

**Psychological symptoms** Psychological symptoms were assessed by the 12-item version of the General Health Questionnaire (Goldberg, 1992). GHQ-12 produces a total score of current psychological problems (Cronbach α = .83).

**Self-rated health** A single item measured overall self-rated health. Participants were asked to rate their personal health on a Likert-type scale ranging from 1 (worst possible health) to 100 (best possible health). Self-rated health, despite its simplicity, is a significant measure of perceived health (Benyamini, Idler, Leventhal, & Leventhal, 2000).

**Results**

**Preliminary results**

In order to test the structure of the Perceived Primal Threat Scale, we carried out a hierarchical confirmatory factor analysis using Lisrel 8.54 (Joreskog & Sorbom, 1996). According to the model tested, two items were assumed to load on each factor (see Fig. 1), which in turn were assumed to load on a higher order factor (‘perceived primal threat’). Overall model fit was assessed according to Hu and Bentler’s (1999) recommendations. Data provided support to our model (chi-square = 9.84, d.f. = 16, RMSEA = .00, SRMR = .02, AGFI = .95, CFI = 1.00). The internal consistency of the perceived primal threat factor was quite high (Cronbach’s α = .91). With regard to illness-related problems, self-care was dropped from further analysis, as the vast majority of the participants (109 vs 12) reported no relevant problem. In the same way, the second item of the Brief IPQ (timeline) was omitted from the analyses due to extreme skewness (almost 83 per cent of the participants reported values equal or higher to 8).

**Perceived primal threat and illness-related variables**

A series of t-tests revealed that participants with at least some problems with mobility reported higher levels of perceived primal threat compared to those with no such problems (M problem = 27.32, M no problem = 22.00; t(119) = 2.53, p < .05, Cohen’s d = .46). In the same way, those with problems in usual activities reported higher levels of perceived primal threat (M problem = 28.83, M no problem = 21.44; t(119) = 3.55, p < .001, Cohen’s d = .65). No differences were noticed as far as problems in pain/discomfort is concerned (M problem = 24.87, M no problem = 21.01; t(119) = 1.81, p = .07, Cohen’s d = .33).

Table 1 presents the correlations between perceived primal threat, subjective health measures and illness perceptions. Perceived primal threat was highly correlated to consequences (Pearson’s r = .54, p < .001), as well as to personal control (r = -.40, p < .001). Also, correlation to illness identity was rather small but significant (r = .22, p < .05).

**Perceived primal threat and subjective health measures**

The correlations between perceived primal threat, and self-rated health and psychological symptoms were high (Pearson’s r = -.48 and .45, respectively, p < .001). However, to examine the relation of perceived primal threat to subjective health measures, after controlling for demographic variables and illness-related factors, two hierarchical regression analyses were performed (see Table 2). In the first regression analysis, psychological symptoms served as the dependent variable; gender, age, education, marital status (entered first, on step 1), health-related quality of life variables, illness perceptions (entered second, on step 2) and perceived primal threat (entered third, on step 3), served as the independent variables. Perceived primal threat accounted for an additional 9 per cent of the symptoms variance (ΔR² = .09, Fchange (1, 105) = 11.72, p < .001). The second regression was similar to the previous, but with overall self-rated health serving as the dependent variable. Perceived primal threat

---

1024
accounted for an additional 7 per cent of the self-rated health variance ($\Delta R^2 = .07$, $F_{\text{change}} (1, 105) = 10.80, p < .001$).

Perceived primal threat as a mediator
To test our hypothesis that perceived primal threat mediates the relationship between illness-related variables and subjective health measures, a structural equation model was fit to the data using Lisrel 8.54 (Joreskog & Sorbom, 1996). According to the model tested, problems with mobility and usual activities, as well as illness-related consequences and personal control were assumed to predict psychological problems, self-rated health and perceived primal threat. Threat was also assumed to
predict psychological problems and self-rated health. Problems with pain/discomfort and all other illness perceptions were excluded from the analysis, as their correlations to subjective health measures or perceived primal threat were rather low (Pearson’s r < .30).

Our model provided a very good fit to the data ($\chi^2 = .11$, d.f. = 2, $p = .95$, AGFI = 1.00, NFI = 1.00, CFI = 1.00, RMSEA = .00). However, direct paths from all illness-related variables to both subjective health measures were insignificant. On the other hand, paths from illness-related variables to perceived primal threat, as well as from primal threat to psychological symptoms and self-rated health were statistically significant ($ps < .05$). Figure 2 presents the significant standardized estimates of the model. Results showed that the presence of problems in usual activities, as well as more illness-related consequences and less personal control were associated with higher perceived primal threat. In turn, perceived primal threat predicted psychological symptoms positively, and self-rated health negatively.

<table>
<thead>
<tr>
<th>β</th>
<th>t</th>
<th>$\Delta R^2$</th>
<th>$F_{\text{change}}$</th>
<th>d.f.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>.01</td>
<td>1.18</td>
<td>4, 114</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>−.04</td>
<td>−.45</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>−.11</td>
<td>−.80</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Educational level</td>
<td>−.15</td>
<td>−1.23</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>.15</td>
<td>1.33</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.11</td>
<td>2.73***</td>
<td>8, 106</td>
<td></td>
</tr>
<tr>
<td>Problems with mobility</td>
<td>−.09</td>
<td>−.77</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Problems with usual activities</td>
<td>.16</td>
<td>1.45</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Problems with pain</td>
<td>.13</td>
<td>1.23</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Consequences</td>
<td>-.20</td>
<td>1.81</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Personal control</td>
<td>−.17</td>
<td>−1.56</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Treatment control</td>
<td>.04</td>
<td>.37</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Identity</td>
<td>.09</td>
<td>.76</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Illness comprehensibility</td>
<td>−.06</td>
<td>−.57</td>
<td> </td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>.09</td>
<td>11.72***</td>
<td>1, 105</td>
<td></td>
</tr>
<tr>
<td>Perceived primal threat</td>
<td>.38</td>
<td>3.42***</td>
<td> </td>
<td></td>
</tr>
</tbody>
</table>

Note: Marital status coding: 1 = living with family, 2 = living alone. Educational level coding: 1 = high school or lower, 2 = higher education. Problems with mobility, usual activities and pain coding: 1 = no problems, 2 = some or severe problems.
*p < .05; **p < .01; ***p < .001
Still, in order to test the validity of the model, we employed a ‘backward’ evaluation procedure in which paths were fixed to zero (one at a time) to test the hypothesis that the key posited relations were important. We also tested an alternative ‘reversed’ model according to which perceived primal threat was assumed to be predicted by the subjective health measures. Thus, the ‘original’ model was compared to a series of nested models in which the predictive validity of the predictors was examined using chi-square difference tests. The results showed that all paths were necessary, whereas none of the alternative models fit the data ($p < .01$, NFI $< .90$, CFI $< .90$, RMSEA $> .10$; $\chi^2$ diffs $> 10.00$, $p < .05$).

**Discussion**

Based on the literature (e.g., Beck & Clark, 1997; Becker, 1975; Dickerson & Kemeny, 2004; Fiske, 2004), we assumed that there is a set of four interdependent ‘primal’ human needs: self-preservation, social integration, personal identity and growth, and positive worldview. The aim of this study was to examine preliminarily the relationship between subjective health and perceived threats to primal needs (or ‘perceived primal threats’) resulting from a chronic illness.

According to the results, chronic patients with problems in their mobility or in performing usual activities reported significantly higher perceived primal threat. Higher perceived primal threat was associated with perceptions of more severe consequences, lower personal control and more symptoms. Also, perceived primal threat was strongly associated with both self-rated health and psychological symptoms, even after controlling for demographic variables, illness perceptions and health-related quality of life: higher perceived threat was associated with lower overall self-rated health and more psychological symptoms. Furthermore, perceived primal threat mediated the relationship between illness perceptions and health-related quality of life, and subjective health measures.

We should stress, however, that these findings are preliminary. Thus, they should be considered with caution and in relation to certain limitations. First of all, this was a cross-sectional, correlation study totally reliant on self-reported data. Second, the size of our sample was rather modest. Third, participants were facing a diversity of chronic diseases. Moreover, only subjective health measures and certain illness-related factors were assessed, while perceived primal threat was measured with a scale not validated in other studies.

Although this is a first examination of a rather new concept, our findings are in line with earlier studies showing that each perceived primal threat is indeed related to well-being (Hagger et al., 2007; Kolkto-Rivera, 2004; Sapolsky et al., 2000). Also, prior research has shown that severe or chronic health conditions put a great burden on patients and deeply threaten their perceptions about self and the world (Kolkto-Rivera, 2004; Livneh & Antonak, 1997; Taylor, 1983).
This study provides preliminary support to our basic assumption that a major stressful situation, like an illness, and relevant perceptions activate a sense of primal threat, which in turn is related to subjective health. A possible reason for our findings might be that perceived primal threat lies at the centre of a cognitive-physiological structure designed to mobilize the person in case of a severe danger (see, for example, Ursin & Eriksen, 2004). As a result, its activation triggers cognitive-emotional, behavioural and physiological processes that further affect functioning and well-being. In this process, the role of evaluations about self and personal resources, as well as about the situation, is essential. As Cervone (2004) suggested, behaviours and reactions are based on appraisal processes, which in turn are based on knowledge structures. With respect to this study, negative illness perceptions and low health-related quality of life, which reflect a personal ‘knowledge’ about the situation, seem to represent a forerunner of perceived primal threat.

Unfortunately, perceptions about self or personal resources were not assessed in the present study. However, a significant question remains. Does the concept of perceived primal threat really add to our understanding about the impact of stressful situations on functioning and well-being? According to our point of view, it is a potentially important factor, as it may be one of the links between the perceptions of self and the situation, and the deeper cognitive-affective and physiological processes that shape health and functioning.

Given that our findings are preliminary, much more work is needed to clarify several issues and answer many questions. Future research needs to replicate our findings and extend them to other populations and situations; examine the associations of perceptions about self and personal resources with perceived primal threat; examine the role of other important factors, including emotions and coping; test the relation of perceived primal threat to physiological processes and different indicators of well-being.

References


Author biographies

EVANGELOS C. KARADEMAS is Assistant Professor of Clinical Health Psychology at the Department of Psychology, University of Crete, Greece. His research interests include the stress process and its impact on health, the role of cognitive factors in adaptation to chronic illness, as well as issues regarding quality of life and well-being.

ARGYRO BAKOULI, ANASTASIOS BASTOUNIS, FANI KALLERGI, PANAGIOTA TAMTA MI AND MARIA THEOFILOU are graduates of the Department of Psychology at the University of Crete, Greece. They participated in research programmes in the field of Health Psychology implemented by the Department of Psychology and are currently enrolled in post-graduate programmes.