The role of metacognitive beliefs in health anxiety

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ABSTRACT

Research has supported the specific role that anxiety sensitivity and health-related dysfunctional cognitions may have in the development and maintenance of health anxiety symptoms. Recent evidence suggests that metacognitive beliefs may also be instrumental in the symptomatology of health anxiety. The aim of the present study was to explore the association between metacognitive beliefs and health anxiety symptoms and to test whether these beliefs are significant predictors of health anxiety after controlling for anxiety, depression, anxiety sensitivity and dysfunctional beliefs. A series of dimensional self-report measures were administered to a large Italian non-clinical sample ($N = 342$). At a bivariate level, metacognitive beliefs about uncontrollability and interference of illness thoughts had a stronger association with health anxiety than any of the dysfunctional beliefs. Results from hierarchical multiple regression analysis indicated that metacognitive beliefs about uncontrollability and interference of illness thoughts predicted health anxiety symptoms over-and-above depression, general anxiety, anxiety sensitivity, and health-related dysfunctional beliefs. Moreover, results from moderation analysis indicated that metacognitive beliefs about uncontrollability and interference of illness thoughts moderated the relationship between anxiety sensitivity and health anxiety. Overall, this study supported the hypothesis that metacognition may have an important role in health anxiety.

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1. Introduction

Health anxiety refers to a condition characterized by misinterpretation of bodily sensations or physical changes as symptoms of serious disease. Those affected by health anxiety have an obsessional preoccupation with the idea that they are currently (or will be) experiencing a physical illness. Typically conceptualized as a dimensional rather than a categorical construct, health anxiety is often thought to exist on a continuum ranging from low to high symptoms (e.g. Ferguson, 2009).

One of the most popular and well researched theoretical accounts of health anxiety has been Cognitive Behavioural Therapy (CBT). CBT models put dysfunctional cognitions at the core of the phenomenology of health anxiety. In particular, Salkovskis and Warwick (2001) described four health-related dysfunctional beliefs of particular importance to the understanding of health anxiety: (a) the perceived likelihood of experiencing a health problem, (b) the awfulness of experiencing a health problem, (c) the inability to cope with an experienced health problem, and (d) the inadequacy of medical resources to treat an experienced health problem. Hadjistavropoulos et al. (2012) found that the relationship between these dysfunctional beliefs and health anxiety was robust after controlling for the effects of depression

and non-specific anxiety symptoms. Moreover, the findings from Fergus (2014) support the specificity of the correlation between health-related dysfunctional beliefs and health anxiety, after a comparison with the relevance of the same core cognitions in obsessive–compulsive disorder (OCD).

Studies about health anxiety and anxiety sensitivity have shown an important association between these two constructs, in both clinical and non-clinical samples (e.g., Abramowitz, Deacon, & Valentiner, 2007; Abramowitz, Olatunji, & Deacon, 2007) and this correlation was found to be significant also, after controlling for negative affect and intolerance of uncertainty (Norton, Sexton, Walker, & Norton, 2005; Sexton, Norton, Walker, & Norton, 2003). In particular, compared to the cognitive and social dimensions, the physical dimension of anxiety sensitivity is the one that seems most strongly associated with health anxiety (Olatunji, Wolitzly-Taylor, Elwood, & Connolly, 2009). Research on the risk factors for health anxiety have demonstrated that anxiety sensitivity has a mediating role in the relationship between childhood learning experiences and the development of health anxiety among young adults (Watt & Stewart, 2000). However, although it is strongly predictive, research indicates that it does not completely explain all of the variance in health anxiety symptoms (Abramowitz, Olatunji, & Deacon, 2007; Deacon & Abramowitz, 2008; Watt & Stewart, 2000), and failed to emerge as a significant prospective predictor of changes in health anxiety (Olatunji et al., 2009).

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Recent advances in health anxiety research have begun to see more modern process orientated forms of CBT conceptualizing and treating health anxiety, such as Mindfulness based CBT (McManus, Surawy, Muse, Vazquez-Montes, & Williams, 2012) and Acceptance and Commitment Therapy (Eilenberg, Fink, Jensen, Rief, & Frostholm, 2015). However although these approaches have been applied clinically, they do not provide a supported conceptual framework to account for the maintenance of health anxiety. One therapeutic approach which has begun to explore the underlying conceptual mechanisms of health anxiety is Metacognitive Therapy (MCT).

Based on Wells Self-Regulatory Executive Function (S-REF) model (Wells & Matthews, 1994; Wells, 2009) metacognitive theory posits that metacognition maybe more important in psychopathology than cognition in the ordinary domain (Wells, 2009). Metacognitive Therapy (MCT) which clinically targets these metacognitive beliefs, has been successfully applied to a range of emotional disorders, in particular depression (e.g., Yilmaz, Gencoz, & Wells, 2015) and anxiety. In a recent randomized controlled trial, MCT was found to be more efficacious in the treatment of generalized anxiety disorder than a form of CBT which targets the cognitive variable "Intolerance of Uncertainty" (van der Heiden, Muris, & van der Molen, 2012). Also a recent meta-analysis suggested that MCT is effective in treating disorders of anxiety and depression and is superior compared to waitlist control groups and CBT (Normann, van Emmerik, & Morina, 2014). Given the successful application of MCT to anxiety disorders, it's reasonable to hypothesize that its application to health anxiety may help improve the treatment's efficacy and to produce more long-term effects.

According to metacognitive theory specific beliefs about uncontrollability and danger of thinking are considered central and predictive of psychological disorders in general (e.g. Spada, Caselli, Nikčević, & Wells, 2015) and health anxiety specifically (Bailey & Wells, 2013; Bouman & Meijer, 1999; Kaur, Butow, & Thewes, 2011), and responsible for guiding and controlling the Cognitive Attentional Syndrome (CAS). In health anxiety the CAS consists of toxic thinking processes such as worry and rumination about illness, attentional threat monitoring for illness related information and maladaptive coping responses such as body scanning and reassurance seeking (Bailey & Wells, 2015).

Evidence exists that both worry and rumination have been implicated as being strongly associated with health anxiety (Fergus, 2013; Marcus, Hughes, & Arnau, 2008). Equally evidence from experimental studies have demonstrated that metacognition has been associated with attentional bias to both health related stimuli (Kaur et al., 2011). In a recent study Bailey and Wells (2013) demonstrated that metacognitive beliefs — in particular negative beliefs about the uncontrollability and danger of worry — accounted for additional variance over and above other variables associated with health anxiety, such as somatosensory amplification, illness cognition and neuroticism. In this study metacognition was assessed by the Metacognitions Questionnaire-30 (Wells & Cartwright-Hatton, 2004), a psychometrically sound measure, but not specifically designed to explore metacognitive beliefs related to health anxiety. In addition, both anxiety sensitivity and dysfunctional beliefs were not assessed. Further to this Bailey and Wells (2015) also identified that metacognition — specifically negative beliefs about the uncontrollability and danger of worry — was not only strongly associated with health anxiety but moderated and explained the relationship between catastrophic misinterpretation and health anxiety.

In sum, existing studies broadly support the role of anxiety sensitivity and dysfunctional cognitive beliefs in the etiology and maintenance of health anxiety, while the role of metacognitive beliefs appears to be significant but it has not accrued the same level of evidence. Hence, the aim of the present study was to explore the association between metacognitive beliefs and health anxiety symptoms and to examine whether metacognitive beliefs predict and account for additional variance when controlling for general distress, anxiety sensitivity, and dysfunctional beliefs. In particular, it was hypothesized that: (a) health anxiety would show a significant positive correlation with metacognitive

beliefs and the relationship would be stronger than that with dysfunctional beliefs; (b) metacognitive beliefs would explain additional variance and emerge as a significant predictor of health anxiety when controlling for anxiety, depression, anxiety sensitivity and dysfunctional beliefs; and (c) metacognitive beliefs would moderate the relationship between anxiety sensitivity and health anxiety.

2. Methods

2.1. Participants

Study participants comprised 342 subjects living in Central Italy urban and suburban areas who responded to advertisements requesting healthy volunteers for psychological studies. Inclusion criteria included being older than 18 and the individual's consent to participate in the research.

The mean age of participants was 37.69 ($SD = 12.20$) years, with a range of 18–80, and 61.4% were females. 59.1% of the participants had a medium level of education (12–13 years, high school degree), 26.3% had a high level (16 or more years, bachelor's degree or Ph.D.) and the remaining 14.6% had a low level (eight or less years, primary or secondary school license). Most of the participants were employed (69.6%), 18.1% were undergraduate university students, and the remaining 12.3% were homemakers, unemployed, or retired. Participants were most likely to be married or cohabiting (49.7%), 43.0% were single, 5.0% were divorced, and 2.3% were widows or widowers.

2.2. Measures

2.2.1. Health Anxiety Questionnaire

(HAQ; Lucock & Morley, 1996). This is 21-item self-report measure that assesses the severity of health anxiety. It consists of four subscales, which measure health worry and preoccupation, fear of illness and death, reassurance-seeking behavior and interference with life. The original version of the HAQ has shown good psychometric properties, and its Italian version (Melli, Coradeschi, & Smurra, 2007) has shown adequate internal consistency ($\alpha > .77$ for all subscales), temporal stability ($r = .89$) and construct validity. Given that we were interested in assessing the global severity of health anxiety, in the present study only the total score was computed.

2.2.2. Beck Depression Inventory-II

(BDI-II; Beck, Steer, & Brown, 1996). This 21-item self-report instrument is used to assess depressive symptoms over the previous two weeks. Response choices are scored from 0 ('absent') to 3 ('severe'). The BDI-II has shown good psychometric properties, and the Italian version of the BDI-II (Sica & Ghisi, 2007) has been shown to have adequate internal consistency (αs in the range .80–.87), test-retest reliability ($r = .76$), and construct validity.

2.2.3. Beck Anxiety Inventory

(BAI; Beck & Steer, 1990). This is a 21-item self-report inventory that assesses the severity of state anxiety. Statement choices are scored from 0 ('not at all') to 3 ('severely'). The original version has shown good psychometric properties, and its Italian version has shown good internal consistency ($\alpha > .80$), adequate test-retest reliability ($r > .62$), and good construct validity (Sica & Ghisi, 2007).

2.2.4. Anxiety Sensitivity Index-3

(ASI-3; Taylor et al., 2007). This is an 18-item self-report inventory that assesses the degree to which the individual fears the potential negative consequences of anxiety-related symptoms and sensations (e.g., "It scares me when my heartbeats fast"). The ASI-3 consists of a single higher-order factor and three lower order factors (physical concerns, cognitive concerns, social concerns). Statement choices are scored from 0 ('very little') to 4 ('very much'). The ASI-3 has shown